

CREATIVE EDUCATION

YOUTH

THE PSYCHOLOGY OF ADOLESCENCE AND ITS BEARING ON THE REORGANIZATION OF ADOLESCENT EDUCATION

By

OLIVE A. WHEELER, D.Sc.

With an introduction by SIR W. HENRY HADOW, CBE, DMus, LL.D., DLit

This book surveys the educational problems that will have to be faced by those who are directly concerned in the present task of reorganising adolescent education—particularly the students and teachers who will be called for service in the various kinds of schools now being differentiated.

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PREFACE

THE use of the scientific method of invention has already changed the face of Western Civilization. The systematic application of scientific discoveries to problems of production and communication, which was such an outstanding feature of the nineteenth century, greatly increased man's material resources and his control of the physical universe : but unfortunately it left him also with a legacy of aggravated human and social problems, such as slums, unemployment, industrial unrest, and organized warfare. These appear to require for their solution increased control by man of his own behaviour and social organizations. The recent growth of the psychological sciences has already resulted in a deeper understanding of human individuals, and in a wider knowledge of the laws which govern their development and associations. At the present time there are therefore new possibilities of the scientific regulation of education, and unprecedented opportunities for guiding educational policy and methods so that in the immediate future man may draw more freely upon his mental and moral resources and thus increase his control of his social organizations. It is my main purpose in *Creative Education and the Future* to examine systematically the chief of these possibilities.

The educational process is regarded throughout as continuous and creative. In the case of each individual it is also unique. This enquiry into the possibilities of the scientific

regulation of education so that it may become a means of solving outstanding social problems cannot therefore be limited to one period in human life-histories, to one kind of individual, nor even to one group of administrative problems. The case for Nursery Schools, the modern demand for the Raising of the School-leaving Age, the present Hadow proposals for the Reorganization of Education, new developments in University, Technical, and Adult Education, changing curricula and methods of discipline and teaching, and all the other chief trends of development in modern education will have to be considered, each in turn, in the light of modern psychological discoveries. In this way it is hoped that the conclusions drawn will constitute the outline of a general policy of *Creative Education*. Such education is creative in the double sense that it encourages the creative growth of living individuals, and at the same time it prepares for improved social and international relations in the future.

It is with gratitude that I acknowledge the help that I have received from friends and colleagues, who have generously spared time to read the draft before publication ; to Professor Bompas Smith for many helpful criticisms ; to Dr. George Seth for valuable suggestions ; to Dr. Margaret Bain and to my nephew, Mr. D. Leslie Wright, for aid in proof-correcting ; and to Miss Jean Francis, who has also assisted in proof-correcting and in the making of the index.

OLIVE A. WHEELER.

CARDIFF,
July 1936.

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INTRODUCTORY

CHAPTER I

CREATIVE EDUCATION

To the modern parent, or to any other interested observer who has a vivid recollection of his own education, it is obvious that some fundamental change has happened recently or is now happening *within* the schools. The young child no longer creeps "like snail unwillingly to school." More frequently there is difficulty in persuading him to remain at home when illness or some other cause requires his abstention from attendance. The play methods of education now almost universally adopted in Kindergartens and Infant Schools, the sympathetic methods of discipline, the interesting occupations engaged in, and the free companionship of other children provided, meet deep-set needs of the child's nature. In the Primary Schools, too, there is life and activity; work is more interesting and less formal, and a larger place is now assigned to physical training and the acquiring of skills than was usual in the past. Discipline is more sympathetic; the teacher is less frequently the wielder of the cane or the represser of life and fun; indeed, in the majority of schools the cane is a relic of the past, a mere museum specimen. In the Secondary Schools there are also differences, many of them improvements, but some needing critical examination. For example, the increase of attention paid to physical health and games, the broadening of the curriculum to include more science, art, music, and modern studies gener-

ally, and the greater stress now laid on practical activities and social life seem to be changes in the right direction ; but the growing pressure of the examination system on pupils at this stage is widely criticized by Secondary School teachers and may require reconsideration and drastic treatment.

To the student of education these changes within the schools are seen to be only part of a wider and more significant movement. They indicate a new insight on the part of members of the teaching profession into the natures of their pupils, and a deeper understanding of the laws which govern child development. They are associated, directly or indirectly, with new views and ideals revealed in current educational literature, and with the slowly growing science of education, which is beginning to provide the means of appraising the various experiments which are constantly being thrown up in the educational world. These experiments are many and varied. There are new forms of government within the schools, experiments in free discipline, and new applications of the house system ; there are new methods like the Montessori Method, the Project Method, and the Dalton Plan. There are new types of educational institutions appearing—Nursery Schools, Central, Senior, and Junior Technical Schools, and Juvenile Unemployment Centres ; there are new developments of Technical, University, and Adult Education. Some of these may be in line with intelligent progress, and others may be ill-conceived and wasteful. All need to be sanctioned or modified by the use of some adequate touchstone of educational value.

The need for a more scientific approach to the study of educational problems and for the development of really

effective criteria by which to judge of educational experiments is all the greater in view of the extended provision for education now being made by almost all civilized nations. There are mounting expenditures on education in almost all countries. For example, whereas in England and Wales the total public expenditure on education in 1914 was £31,310,000, it had risen to £86,469,000 in 1931; and even after severe measures of economy recommended by the Committee on National Expenditure in that year had been effected, it stood at £83,605,000 in 1933.¹ This in itself is something new: education is now an important national service, and is likely to become an increasingly large item in national expenditure. It is, of course, true that there have been setbacks due to post-War economic conditions, but the movement for more and better education at the public expense seems likely to gather force in the near future.

In the present century there have been other and perhaps more direct signs of a widespread realization of the importance of education for national welfare in almost all the leading countries of the world. During the Great War there was an obvious interest, not confined to educational experts, in comparing the merits and defects of the educational systems of the participating nations; and it is surely not without significance that during that period there were attempts (in some cases abortive, it is true) to extend provision for education in various directions. In England there was the Fisher Act of 1918, with its provision for part-time compulsory continued education beyond the primary stage; in France there was a similar attempt to raise the school-leaving age; in Germany there was an

¹ *Statistical Abstract for the United Kingdom*, H.M.S.O., 1935, Table 52, pp. 62-3.

extension of provision for secondary education; and in the United States there was the passing of the Smith-Hughes Act, providing federal aid for vocational education.

Since the War there have been almost identical demands, both in countries enjoying democratic forms of government and in those under the control of dictatorships, for some form of secondary education for all to follow upon the universal primary education formerly provided. There has already been considerable extension of provision for secondary education of various kinds. For example, in the United States the total number of pupils in attendance in Secondary Schools of all kinds is estimated by the Bureau of Education to have increased practically sixfold since the beginning of the century, from 695,903 in 1900 to 4,132,125 in 1926.¹

In Great Britain the demand for *secondary education for all* became associated with the realization that it would be desirable to have varied and perhaps new types of post-primary education to meet the needs of pupils differing in ability from those previously in attendance at Secondary Schools. Accordingly the Consultative Committee of the Board of Education, which in 1926 issued the famous report on *The Education of the Adolescent*, commonly known as the Hadow Report, not only recommended the compulsory raising of the school-leaving age, but also set out a scheme for reorganizing education. This involved several new features, the chief of which were differentiation of provision for secondary education, a clean cut at about the age of 11 + between primary and post-primary education, and an end-on arrangement between primary and all forms

¹ *Bulletin* 12, 1928, of the United States Bureau of Education.

of secondary education. Although this movement for the reorganization of education was, for a few years, slowed down by the economic troubles of the period, and particularly by the "economy" policy of the Treasury, it is interesting to notice that the Board of Education is now actively encouraging Hadow reorganization schemes, both by its official circulars and in less direct ways. Already some Local Education Authorities have practically completed reorganization, and many have 50 per cent. or more of their primary departments reorganized. Recently, all political parties have supported the view that the majority of individuals should continue their education beyond the present limit of 14; and an Act of Parliament has been passed for the raising of the school-leaving age to 15, though with certain exemptions. There is not much doubt that sooner or later the proposal to raise the age to 15, or even 16, will be fully realized in this country; but perhaps the chief significance of this particular movement towards universal and differentiated secondary education is that it is the first big-scale realization in Britain that the organization of education, as well as the processes and methods within the schools, should be adjusted to the laws which govern human development, and to the varieties of individuals for whom provision has to be made. At present, the half-truth that the coat must be cut according to the cloth, the educational system be designed according to the national material resources, is being emphasized; but the report on *The Education of the Adolescent* was an expression of the other and perhaps more easily forgotten truth, that the coat must also be cut according to the would-be wearer, the educational system be organized to fit the individuals for whom it is created.

The first Hadow Report¹ was followed by the publication in 1931 of a second,² dealing with the problems of the Junior School in a reorganized system of education ; and in 1933 there was a third report on Infant and Nursery Schools issued by the Consultative Committee. The three Reports seem to mark a new era in British education. They are based on an explicit recognition of the continuity and periodicity of the educational process, and on a realization of the need to adjust education more exactly to the varieties of individuals for whom provision has to be made. In short, they constitute a big-scale attempt to psychologize education.

There are other signs of change, not only within the schools, but also in the whole educational system. There is an increased community interest in education, and there is a practical certainty of a great extension of provision in the near future. There is also the possibility of such a real improvement in quality of education, that through it there may be evolved a more united and harmonious society. But there are also dangers inherent in the present situation, dangers of sudden change and of unintelligent breaking with tradition, of quackery in educational practice ; of ill-considered and therefore wasteful expenditure ; and, last but not least, of mass-production and the mechanization of education. These dangers are increased by the fact that education is often regarded as everybody's business. Without study of the experiments and traditions of the past, without knowledge either of the science or art of education, and without any real insight into its aims, there are people who will support any break with tradition

¹ *The Education of the Adolescent*, H.M.S.O., 1926.

² *The Primary School*, H.M.S.O., 1931.

which happens to be convenient to the individuals in whose careers they are directly interested. This is probably the explanation of the recent cheapening and mechanizing of education in some American Universities. According to Dr. Abraham Flexner's description in his book entitled *Universities—American, English, German*,¹ undergraduates in some American Universities are now being allowed to qualify for degrees by taking courses in "newspaper practice," "wrestling, judo, and self-defence," "principles of advertisement," "practical poultry raising," "food etiquette and hospitality," and "clog dancing." Perhaps American educational experts who had clear ideas of the meaning of university education were powerless to resist the public demands for convenient changes; but, from whatever cause, it is obvious that the courses of study in such Universities have not been determined by adequate guiding principles, and the changes suggested have not been sifted by the use of sound criteria of educational value.

Equally irrational and hardly less dangerous is the attitude, perhaps more characteristic of this country, of regarding all breaks with tradition as undesirable. Even among teachers there is too frequently an apparent satisfaction with traditional curricula and rule-of-thumb methods of teaching, and an ignoring of the slowly growing science of education. Indeed, the view is still widespread in certain educational circles that without scientific investigation or the comparison of different experiments and systems of education, and without even a carefully thought-out educational philosophy, we shall somehow "muddle through" to an appropriate English system and method of education. It is implied, for example, at least in a modified form, in

¹ Oxford University Press, 1930, pp. 55-6.

Dr. Cyril Norwood's recent work entitled *The English Tradition of Education*.

In this most interesting contribution to modern educational literature Dr. Norwood outlines the tradition of education embodied in the English Public School system, and endeavours to show that the essential elements in it are religion, discipline, culture, athletics, and service. At first sight it might appear that his analysis is open to the obvious criticism that he has idealized the system, ignoring the frequent formalism of its religious observances and the occasional brutality of its discipline, minimizing the ineffectiveness of its intellectual training and the remoteness of its culture from modern life, and veiling the snobbery of its caste system. But to this objection he might very reasonably reply that he is justified in judging a national tradition by its best expressions, just as one judges a tide by its high-water marks.

It is not, however, in regard to his analysis or even in regard to the value of the English Public School tradition that the gravest doubts of Dr. Norwood's position arise. The foundations of his main thesis—that in this great national tradition of education we have the instrument that can in the future create an educated democracy—are not so firmly established that they can be accepted without detailed and critical examination. Is not the tradition of the English Public School essentially undemocratic, and so overladen with inert ideas that it may fail to adapt itself to a rapidly changing world? Are there not rival traditions of more democratic origin in England and Wales and Scotland, which also have their contributions to make to the education of the future? What should be the relationship between international educational movements and a national

tradition of education? Was the English Public School tradition formed with due regard for, and understanding of, the nature and variety of individuals to be educated, or is it too repressive of individuality? If there has since arisen a science of education and a new insight into the laws which govern human development, should not this profoundly modify the earlier views of education?

It is not through the blind acceptance of any tradition of education, no matter how valuable this may have been at the time of its formation, that an appropriate system and method of education will be evolved. There must be adjustments to meet new needs arising from changing environmental conditions; and if these can be made with due regard for the natures of the individuals who are being educated, and in the light of an adequate philosophy of life, they will constitute refinements and real improvements upon earlier traditions. The tendency to ordered change through the increasing scientific regulation of educational method and organization is undoubtedly the outstanding feature of modern education, and may very well mark the beginning of a new era in educational thought and practice.

THE SCIENTIFIC BASES OF EDUCATION

It is little more than a truism to say, that if a master is going to teach John Latin he must know the two objects of the verb "to teach," namely, John and Latin. It is just as important for him to understand the learning processes of John's mind, with which his teaching methods should be closely correlated, as it is for him to have a sufficient background of knowledge of the subject-matter

being taught. This would be true even if his whole work were to teach John Latin. But the modern educator realizes that he has a much larger task than that of teaching Latin or any other subject. His business is to *educate* a living individual, to provide him with the guidance which he needs in his particular adventure of life. He recognizes that education

"Rather consists in opening out a way
Whence the imprisoned splendour may escape,
Than in effecting entry for a light
Supposed to be without."¹

In view of this broader conception of his work, he realizes that John and not the Latin should be at the centre of his thoughts. Consequently, it becomes necessary for him to understand not only the learning or intellectual processes within the individual's mind, but his whole nature and the laws which govern its development. Equipped with this new insight and understanding, he may even be led to doubt whether it is desirable to go on teaching John Latin. In any case, the Latin becomes of secondary importance ; it is only the means (to which there may be alternatives) employed for developing the individual's knowledge and capacities.

The individual, and not the subject, then, should be regarded as the centre of the educational process. Consequently, the sciences which throw light on the nature of the human individual are not only important to the teacher in order that his technique may be improved, but they are, or should be, the bases of educational policy.

In the past, educational policy has had no scientific basis, but has been determined largely by mere tradition or the

¹[R. Browning, *Paracelsus*.

accidents of political life. The recent development of the biological sciences is at last beginning to make a systematic theory of education possible; and in a very real sense marks the beginning of a new era in education. In former times, theories of education were matters of opinion and were usually ineffective and negligible in their influence on the system of education, though they occasionally had some effect on teaching methods. Now the applied science of education is beginning to be operative in determining policy, and is also much more effective in modifying and improving educational practice. It seems probable that just as the application of the physical sciences to the solution of the problems of production led to the *Industrial Revolution*, so the rise of the biological sciences, and particularly the appearance of the youngest of all the sciences, namely, psychology, will bring in its train an *Educational Revolution*, of far-reaching importance to the health and happiness of man. The effects of the application of scientific methods to the solution of educational problems may turn out to be complementary to the results of the application of the physical sciences to problems of production. The one increased man's material resources and his control of his physical environment; the other will increase his mental resources and his control of his social organizations. The first virtually gave him a greatly increased body; the second will perhaps enable his mind to dilate to the new dimensions of his body.

What are the sciences that will be of most service to education? If we accept for the moment the convenient, if superficial, division of the world into two classes of objects, namely, inanimate objects that "stay put," and living organisms that "exhibit behaviour," it is obvious that,

since educators are concerned with members of the second group, it will be the biological sciences, which deal with the phenomena of life, that will stand in the closest relationship to the science of education. It is of course true that within a living organism there are complex bodily processes taking place, such as circulation, digestion, and respiration, which appear to obey physical and chemical laws. At first sight, the science of biology might appear to be physics and chemistry applied to the understanding of living organisms. But most modern biologists are agreed that physical and chemical conceptions are insufficient in biology: they are too analytic and abstract. "As biologists," said Professor J. A. Thomson, "we wish to describe the activity of the creature as a whole. What is the 'go' of it, how does it keep agoing?"¹ Or, more recently, Professor J. S. Haldane, "The life of an organism can only be interpreted or described as organic behaviour. It cannot be analysed, as we analyse the working of a machine, into a sum of the behaviours of separable parts. The conception of an organism as a machine is far more useful than no clear conception of it at all, but seems to me quite insufficient for scientific biology—insufficient because it gives us a quite inadequate power of prediction."²

The science of psychology is even more concrete than biology. Just as biology, while it utilizes physics and chemistry, has its own distinctive guiding concepts, so psychology, while it uses biological data, has its own more synthetic interpretations. Psychologists do not regard the chief object of their study—a human being—as a mere aggregate of cells or molecules, nor even as a mere living

¹ "Is there one Science of Nature?" *Hibbert Journal*, Oct. 1911, p. 119.

² *Psychology and the Sciences*, ed. by W. Brown, 1924, p. 18.

organism, but as a person, a body-mind, responding to his environment and constantly influenced by, and adjusted to, his fellows and various social groups. It is the special province of another science, sociology, to study social groups as wholes ; psychology is always concerned with the experiences of individuals, though these may behave differently as members of different groups.

The sciences that throw light on living organisms appear then to arrange themselves in a kind of hierarchy, from physics and chemistry, physiology and anatomy, biology, to psychology and sociology. Both medicine and education need to utilize the biological sciences for the fulfilment of their practical aims, but with a different emphasis on the separate sciences. Medicine is primarily concerned with the human body and the laws of health ; consequently, while it makes what use it can of physics and chemistry, biology and psychology, the emphasis is laid on human physiology and anatomy, the sciences most directly concerned with the human body. Education, on the other hand, is concerned with the whole individual and his many-sided development ; consequently, the basic sciences to which it is most closely related are biology, human physiology and anatomy, psychology and sociology, but with the emphasis on psychology. The discoveries of medicine, as the positive science of bodily health, may also be of value to education, for it is always concerned with whole individuals, body-minds, and not with minds functioning *in vacuo*.

Psychology has been variously defined as the science of human nature, of mind, of consciousness and of behaviour. Each of these definitions has its obvious drawbacks, which make it unacceptable to some thinkers ; but there is general agreement among psychologists (with the single exception

of the Behaviourist School) that the scope of the study includes both behaviour and the mental experiences that underlie behaviour. The attitude of the psychologist is then different from that of other scientists. He is concerned with the behaviour and experiences of *subjects* when they are faced with certain objects or conditions ; whereas they are concerned with *objects*, or aspects of objects. For example, John Dalton, the famous chemist, became momentarily a psychologist after he had bought as a present for his mother a pair of silk stockings, which to him appeared to be grey and therefore appropriate for a Quaker, but to her appeared to be "as red as a cherry." As a chemist, he might have proceeded to investigate the nature of the dye used. If he had been a physicist, he might have attempted to measure the frequency of the colour-waves. In either case, his attention would have been concentrated on the object, the stockings. But actually in his *Note on Colour-blindness* he adopted the attitude of a psychologist, and concentrated his attention on the behaviour and experiences of subjects (himself, his mother, his brother, and the neighbours) when they were faced with the same object.

While the province of psychology is thus seen to be distinct from that of the other sciences, it is important to notice that it also uses the methods of science—observation, experiment, and measurement—for extending the boundaries of its knowledge. For example, it is no longer content with haphazard observations concerning difficulties in colour-perception, like those of John Dalton. It seeks to refine and extend this knowledge of colour-blindness, and to this end it devises experiments to discover in respect to what particular colours a subject experiences difficulties. In an actual case, a man was first given a red pattern of

standard brightness, and, without any use of the term "red," was asked to match it by selecting all those which were the same from a group of similar textures of standard brightness. He picked out as identical the reds, greens, and greys. Further tests revealed that he had no difficulty in matching other primary colours, so that the exact nature and extent of his difficulty was thus discovered. As a result of many such experiments, it is now known what are the chief kinds of colour-blindness that are likely to occur. Statistical enquiries have shown that green-red is the most common form of colour-blindness; and that the proportion of men and boys who have serious difficulties in regard to the perception of colour is higher than that of women and girls. This is only one illustration, out of many that might be given, to show how the use of the ordinary methods of science and particularly the use of experiment (that is, observation under controlled conditions) may extend the boundaries of knowledge concerning the behaviour and inner experiences of individuals. Modern psychology is, then, a positive science; and it has already achieved a considerable measure of success in its accumulation of exact knowledge of human nature, notwithstanding its short history.

The influence of psychological discoveries on education may either be direct or indirect. In the former case, an investigation may be undertaken with the definite purpose of throwing light on some educational problem. For example, certain psychological experiments were recently devised to analyse the process of appreciation of simple poetry; and the general conclusion was deduced that when there was the keenest enjoyment of poetry, the three factors—vivid imagery, continuity of mood and meaning, and

rhythm—developed in harmony with each other.¹ This analysis has a direct bearing on the method of presentation of a new poem which should be adopted by a teacher in order to give the majority of the pupils the best chance of appreciation. Most of the current methods of presenting poetry to children do violence to one of the three chief factors that have been distinguished. The method of exposition is too critical and analytic, and therefore disturbs the continuity and imagery factors. The methods of silent reading and of oral reading by the pupils pay too little tribute to the rhythm factor, while the method of recitation (or repetition) frequently results in the sacrifice of the psychological rhythm to the metrical measure. What seems to be needed, at least for poetry in which imagery plays a large part, is an image-formation method in which justice is also done to the continuity and rhythm factors in appreciation.

What exactly does this mean in practice? Suppose that Shakespeare's "Song on Winter" had been chosen as a suitable poem, having regard to the age and interests of the children. The psychological analysis seems to indicate that there should first be an informal discussion of Winter, as a preparation for the relevant imagery. The children might be asked what the country looks like in winter, what they would expect to see if they were staying at a farm, what people look like out of doors when it is very cold, what they feel like, what they do to try to keep themselves warm, what it would be like indoors. Then would follow a reading of the poem at such a rate and in such a manner that its psychological rhythm and its continuity would be

¹ O. A. Wheeler, "An Analysis of Literary Appreciation," *British Journal of Psychology*, 1923.

preserved. How many teachers know the speed necessary for clearness and continuity, or the laws which govern the beats of attention? How many have prepared themselves to read effectively, and with psychological insight? Yet it is essential that this first reading should be artistic, and exactly adapted to the tempo of the pupils' minds, if the poem is to be really enjoyed. Then would come a slower re-reading, with questions concerning what the children can see, hear, and feel in imagination; finally, the poem would be read straight through again.

Such direct applications of psychological discoveries may be important and will probably become increasingly important in the future; but it is the indirect influence of psychological knowledge that at present is so outstanding. Indeed, it is no exaggeration to say that the whole texture of modern educational thought is largely psychological. Experiments and researches undertaken quite independently of educational needs may turn out to have important bearings on the theory and practice of education. For example, Professor Cyril Burt's study of delinquent boys and girls¹ was undertaken in his capacity as psychologist to the London County Council, and for the specific guidance of magistrates and others concerned with the treatment of juvenile offenders, tried in the London Courts. But the scientific observations that were thus accumulated and Dr. Burt's interpretations of the causes of the various misdemeanours have already affected the methods of prevention as well as the cure of delinquency; and in the long run they cannot fail to influence the whole theory and practice of school discipline.²

¹ C. Burt, *The Young Delinquent*, University Press, London, 1925.

² See Chapter XXI.

There are certain branches of human psychology which stand in particularly close relationship to education, and which are likely in the future to be of the greatest use in improving educational methods and policy. There is first the psychology of the *learning processes*, developments in which are likely to affect the actual technique of teaching. Then there are branches of the study which have more general bearings on educational practice and policy, such as, *genetic* psychology, which deals with the development of experiences and behaviour with increasing age; *individual* psychology, which is concerned with differences between individuals and variations in human behaviour; and *social* psychology, which treats of the behaviour of the individual as he is influenced by the societies or groups of which he becomes a member. In all these fields of enquiry, positive knowledge is accumulating, which can be applied to the solution of educational problems. Of course, this does not mean that education may not need to conduct investigations of its own. In this respect it is like other applied sciences, such as medicine and engineering, making what use it can of allied sciences and yet having its own special fields of enquiry.

There can be no doubt that education will be more and more influenced in the future by discoveries in the psychological sciences, and by the conclusions drawn from its own scientifically conducted investigations. It has already been pointed out that it is this scientific regulation of methods and policy that constitutes the most important new feature in modern education. But education will always remain something more than an applied science: for it must concern itself with values and ideals. The

findings of psychology do not determine the *ends* of education. Indeed, the psychologist, *qua* psychologist, is not concerned with ideals or ends; it is not his business to consider how people *ought* to behave, but only to describe and interpret how they do behave. He is not less interested in the sinner than the saint; the abnormal than the normal; the neurotic than the healthy. On the other hand, educators are necessarily concerned, not only with what the individual now is, but with what he may become; not only with existing human society, but with its possible improvements. Education, then, has philosophical as well as scientific bases. It must determine its own *ends*; and only after this has been done can it use psychology and the other relevant sciences to guide it in selecting the *means* to be adopted for the attainment of those ends. "To make progress," says Sir T. P. Nunn, "education must, no doubt, accept increasingly scientific regulation; but it can never be reduced, any more than life itself, to an applied science. . . . In relation to that great vital function, the psychologist must always be contented with the position of a critic, whose primary business is not to determine the aims of education, but to secure efficiency and economy in the means by which those aims are pursued."¹

To return to our original example, it is not the function of the psychologist to decide whether there shall, or shall not, be compulsory Latin in a Secondary School. But, if it be decided to adopt the policy of compulsory Latin, psychological knowledge of an individual's learning processes will be useful in devising efficient means of teaching him Latin. Of course, the investigation of certain individuals' powers and interests may give birth to doubts—

¹ "Psychology and Education," *British Journal of Psychology*, 1920, p. 170.

concerning the desirability of trying to teach them Latin. The new psychological knowledge may be instrumental in disturbing the older traditional view ; and may, in effect, lead to the re-valuation of the originally accepted ideal. There will, however, always be other factors than the psychological data to be taken into account in the final re-determination of policy. There must be a guiding philosophy as well as an applied science of education ; a clear and adequate conception of the meaning and purpose of education, as well as positive knowledge of the natures of the individuals to be educated.

THE MEANING OF EDUCATION

In order to define education and to gain a clear conception of its main purpose, it seems to be necessary to adopt, at least provisionally, some working philosophy of life.

Reflection on even the most " practical " views of education leads almost invariably to the raising of grave philosophical issues. For example, education is sometimes regarded as the training of the individual for his vocation, and immediately the question arises : What is the individual's *real* vocation ? Is it not true that every individual, born into a civilized democratic community, is *called* to do many other things than the work by which he earns his daily bread ? He is perhaps called to fulfil the responsibilities of parenthood ; certainly to fulfil the responsibilities of citizenship, which entails not only the judging of issues of great moment to the well-being of society, but also the right use by the individual of his leisure, and the undertaking of useful, perhaps public, work in the spirit of stewardship and service. Even this does not constitute the whole

of his vocation in life. Surely, a human individual with powers of creation and reflection is also called to adjust himself to the living universe, to understand it so far as he is able, and to co-operate in the fulfilment of its purposes.

There is no human being, however insignificant, whose function it is to be a mere cog in the industrial machine. There is no individual, however intellectual, whose whole business in life it is to acquire information. On this account, the majority of modern thinkers are not satisfied with narrow utilitarian or academic views of education. Even if they are individualists, they may regard education as a preparation for complete living. If they stress its social or religious ends, they may define it as a training for citizenship or for the realization in thought and conduct of the ultimate realities of the universe. It is not only the last of these definitions that raises fundamental philosophical problems. What is "complete living"? Does it imply freedom for the individual to develop his own powers and interests, without regard for the rights of other individuals, or the customs and traditions of society? What is citizenship? Is good behaviour or citizenship the same in one type of society as in another? If not, should the individual accept the moral code of his time and society, or should he strive for something better, the expression of some ultimate reality? The truth is that as soon as serious attempts are made to understand the meaning of such terms as "vocation," "complete living," or "citizenship," it is obvious that the different views of education indicated by their use are dependent on different interpretations of human nature and society, and usually imply different philosophies of life. In particular, they seem to pivot

round different conceptions of the nature of individual development.

There have been many thinkers, from Rousseau to Professor Henri Bergson, who have emphasized the view that individual development comes mainly from within. Rousseau regarded human societies as held together by "contracts" between individuals, which always after fixation tended to become repressive of individuality. Consequently in the ideal education of *Émile*, described by him, the boy's occupations and studies are guided throughout by his native interests and not by any educational tradition, or any conventional opinion concerning the accumulated learning of adults. "Everything is good as it comes from the hands of the Author of nature," says Rousseau; "everything degenerates in the hands of man."¹ *Émile* was therefore taken away from schools and social institutions and was provided with a special tutor whose main business it was to study him, so that his natural abilities might have full scope for development, unhampered by the pressure of tradition.

"Man is born, lives, and dies," says Rousseau, "in a state of slavery; . . . and as long as he preserves the human form he is held captive by our institutions." It is obvious that Rousseau's revolt against existing society, which was in the main political, led him to a false philosophy of life and to a fatal misunderstanding of individual development. He failed to see that natural growth for a human being means social development. *Émile's* true nature was just as much distorted by his life of loneliness, which gave him few opportunities for the expression of his social impulses, as it would have been if he had been brought up

¹ *Émile*, p. 1.

in a community with such hide-bound traditions that he was denied opportunities to express his other natural interests.

We may hold, as Bergson does, that the growth of a human being, as of any other living organism, is directed from within and is essentially creative. In Professor Lloyd Morgan's terminology, although physical and chemical factors are "involved," there "emerge" other qualities in this process of development. Consequently, education should "follow nature"; and should always start from the abilities and interests of the individual to be educated, and not from the other end, namely, the traditions or accumulated learning of the social group to which the individual belongs. The *élan vital* of each human being should be respected. It must neither be repressed nor forestalled if he is to develop harmoniously. "Freedom for each to conduct life's adventure in his own way and to make the best he can of it," says Sir Percy Nunn, "is the one universal ideal sanctioned by nature and approved by reason."¹

It must not be forgotten, however, that man is as much distinguished from the lower organisms by the high development of his social life as he is by his use of tools and of language; and from the beginning the child inherits social, as well as egoistic, impulses. The *élan vital* which directs his development from within urges him to co-operate with his fellows, and to utilize, by selection, not only his physical, but also his social, cultural, and spiritual environments. His *formal* education should be a direct aid to this selection, a simplification of the complex environment of a modern civilized society so that he is not overwhelmed by its

¹ T. P. Nunn, *Education; its Data and First Principles*, 1920, p. 9.

“booming, buzzing confusion.” His informal education is not, of course, to be ignored, for he will naturally utilize for his development other agencies than his school or college. His home, his locality, the various teams and social groups of which he becomes a member, his Sunday School and Church—all these contribute to his life, and therefore to his education. But his school should be a controlled environment, suitable to his immaturity and adjusted to his stage of development, and providing him with opportunities to use his growing powers. It is primarily a social institution, a form of community life, in which those agencies should be concentrated that will be most effective in bringing each individual, according to his abilities and stage of development, to share the inherited resources of the human race, and thus to learn to live abundantly and to use his powers for social ends.

If the school is to give real guidance in the art of life, it obviously cannot be static, but must change with the developments of human life. New additions to culture and significant experiments in social life should be reflected in its curriculum, discipline, and methods. It will not be by the acceptance of any ready-made tradition of education, valuable as this may have been at the time of its formation, that a system will be evolved appropriate to present-day needs. If there have been changes in the form of government of society, if, for example, there has been the growth of a democracy, the whole organization of education will need to be correspondingly modified. For it is to the *living present* that the individual who is being educated must adjust himself. The difficulty about a tradition of education, whether local or national, is that it is almost invariably infected with inert ideas, and therefore cannot

give that guidance to the individual which he most needs in his particular adventure of existence. It is, of course, obvious that the *living present* "reclines on the past," but it is also true that it "inclines towards the future." "No more deadly harm," says Professor Whitehead, "can be done to young minds than by depreciation of the present. The present contains all there is. It is holy ground; for it is the past and it is the future."¹

Adjustment to the living present is not necessarily inconsistent with self-realization. There is a possibility of freedom for each individual due to the essential "openness" of the present. The creative impulse which is at work within each living person, enduring by changing, and continually enriching itself by experience, is similar to that creative movement which has expressed itself in the whole evolution of life and in the unfolding of human history, and is now concentrated in the urge of the living present towards higher achievements.

Education should not be regarded merely as a method of conserving the best of the past: along that line there is no possibility of freedom for the individual. It should rather be regarded as forward- and not backward-looking. Dewey defines it as "the development within the young of the attitudes and dispositions necessary to the continuous and progressive life of a society," and it is because he conceives of the life of a society as "progressive" that his view is not inconsistent with the recognition of the essential creativeness of each individual.

The recognition of the creativeness of each living individual, the realization of the deep-set social impulses within the human being, and the belief in man's fundamental

¹ A. N. Whitehead, *The Aims of Education*, 1929, pp. 3-4.

urge to be in harmony with the process of creative evolution can only lead to one view of education, namely, that it is, or should be, a means of further human evolution and of the emergence of higher values than those so far achieved in human history. Through his education, the individual should be guided in his adjustments to the living present, and thus be enabled to express the creative impulse within, and to reach out towards ideals not yet attained by the society to which he belongs. He should learn to value such ultimate realities as Truth, Beauty, Goodness, and Peace; to accept as desirable a moral code, which is characteristically designed to promote the evolution of present-day customs towards their proper perfection. He will have "freedom to conduct life's adventure in his own way and to make the best he can of it." He will also have opportunities for the practice of fellowship and for experiments in community life; and inevitably he will be found engaged in the pursuit of ideals. There is, then, no irreconcilable opposition between the individualistic, social, and religious aims of education, if education be regarded as a means of further creative evolution.

In the light of this guiding conception of education, the treatment of the problem of assessing modern educational movements and tendencies seems to fall naturally into three parts. Firstly, it would seem to be desirable to obtain a general view of the changing modern world, or, more accurately, of the *living present*, to which individuals now being educated must adjust themselves, if they are to play their full part in the emergence of higher values. Then it will be necessary to examine, in general outline, *the nature of individual development and the chief varieties of individuals* for whom educational provision should be made. No attempt

will be made to consider analytically each learning process (important as this might be in the assessing of detailed developments in teaching methods), for the main purpose of this enquiry, which is to discover means of appraising outstanding recent changes in educational thought and practice, will be more likely to be achieved by the preservation of a good perspective than by the introduction of many details. Lastly, the data set out concerning the *living present* will need to be brought into relationship with the facts collected and the views elaborated concerning *living individuals*. By this means, it should be possible to deduce well-founded conclusions concerning modern tendencies in education and perhaps to point the way to the solution of some outstanding educational problems.

SECTION ONE
THE LIVING PRESENT

CHAPTER II

THE GROWTH OF MODERN SCIENCE

IN order to grasp the living present, it will be necessary to review, in broad outline, the most significant features of recent human history. For convenience, the many developments which appear to be occurring will be grouped according to the three main lines most characteristic of human evolution.

In the first place, man appears to be distinguished from the rest of the animal creation by his intelligent inventiveness and his power to modify his environment. He has invented tools and machines in such variety that he has widened the sphere of his activities and gained a large measure of control of his physical environment. He has also provided himself in language with an immaterial medium in which to express his thoughts; and his mind is therefore not necessarily riveted to his material environment.

Man is not only intelligent: he is also outstandingly sociable. The variety and complexity of his social organizations distinguish him from all the other vertebrates. It is true that there are other organisms, notably ants, bees, and wasps, which also have developed highly complex societies, but in their case, these have not been associated with any marked power of profiting from individual experience. But man is continually learning, experimenting, inventing; and the high development of his social

life has meant that his creative efforts are cumulative, the inventions of each generation leading to further developments in the next.

A third characteristic seems to distinguish man from the rest of creation, namely, his deep desire for a religion or a philosophy of life. He never rests content with the pleasures of present sense-experience, but pursues in a great variety of forms a continuous quest for relationship with, and understanding of, that which is beyond, behind, and within, the passing flux of immediate things.

It is an accepted commonplace that the conditions under which we live are changing more rapidly now than ever before in the history of mankind. There appears to be an increase of speed, or a different time-span, in the movement of human evolution. In the past, there have been varied developments, sometimes accelerated and sometimes slowed down, along each of the three main lines distinguished. There have been inventions and discoveries, improvements in man's practical activities, his arts, crafts, and languages. There have been experiments in social life, and changes, sometimes revolutions, in forms of government. There have been artistic creations and philosophical reflections, which have thrown new light on the meaning of life itself; and there have also been gradual developments in man's ethics and religion.

There have been single inventions that have profoundly affected man's life. For example, the invention of printing in the early fifteenth century was one of the most significant changes in human history. It increased the permanence and the communicability of man's ideas. Yet it took almost four centuries for reading and writing to be common

accomplishments among the masses. In this country, as late as 1843, 40·85 per cent. of those who married were unable even to sign their own names in the register, notwithstanding the fact that a printing-press had existed in England from 1476. It is true that illiteracy has now practically disappeared, and that almost every normal adult can now write a letter and read his newspaper. Indeed, many people spend such a large proportion of their waking life in reading, both as an aid to thinking and as a narcotic for thought, that it would now be difficult, if not impossible, for them to adjust themselves to an environment which did not contain books and other printed matter. But it took more than three hundred and fifty years for the effects of the invention of printing to spread to all classes of society in this country, and even now there exist other civilizations in which illiteracy is common.

INVENTIONS

Compare this with more recent developments in communication. The last hundred years, and still more the last fifty, have seen the invention of many new forms of transport—railways, steamships, bicycles, trams, motor-cars and buses, caterpillar tractors, airships and aeroplanes. Communication at a distance has become common by telegraph, telephone, cable, and wireless. News can now be quickly conveyed by cinema and radio services, and experiments in television are proving increasingly successful. Perhaps no one of these discoveries in itself is so significant as that of the art of printing, but modern inventions have come in rapid succession and not singly. Owing to the development of the applied sciences dependent on

Mathematics, Physics, and Chemistry, human invention towards the end of the nineteenth century was no longer sporadic.

There is also another striking difference between the past and the present. The earlier inventions were slower in spreading ; they remained confined for a longer time to a certain privileged group or to a particular locality. They left much unaltered ; large sections of mankind were unaffected. Modern science is increasingly international, and there have also been such rapid developments in methods of communication that now almost any new discovery can be rapidly and widely disseminated. For example, broadcasting is only about fifteen years old, and yet its use has already affected rural as well as urban life, and has spread throughout the civilized world. In general, communication has become so swift and far-reaching that there has resulted an increase in the scale and rate of change in human history which has been rightly described by Mr. H. G. Wells as "relatively terrific."

SCIENTIFIC METHOD

Many and far-reaching in their effects on human life as modern scientific inventions have been, it is perhaps the development of the scientific method of enquiry which is most profoundly significant for the future. There may be a certain element of truth in the view that modern science was foreshadowed in certain directions in Greek thought ; but the distinctive method of enquiry used by modern science, its constant testing of hypotheses by direct observation and experiment, has no parallel in the earlier period. This is the new feature. It was not until the

seventeenth century that Bruno and Galileo ventured to trust their own observations concerning the movements of the heavenly bodies, against the authority of the Church and of Aristotle. It was in the same century that Sir Francis Bacon advocated the *inductive* method of seeking truth.

“Man, the servant and interpreter of Nature,” he says, “performs and understands so much as he has collected concerning the order of Nature by observation or reason, nor do his powers or his knowledge extend further.”¹

“There are and can be but two ways of investigating and discovering Truth. The one flies from sense and particulars to the most general axioms, and from these as first principles, and their undisputed truth, determines and discovers middle axioms ; and this is the way which is in use. The other draws out the axioms from sense and particulars, by ascending uniformly and step by step, so that at last it reaches the most general ; and this is the true way but untried.”²

It was only in the last century that the “true method,” conceived of vaguely by Bacon, was tried out and gradually perfected. “The greatest invention of the nineteenth century,” says Professor Whitehead, “was the invention of the method of invention. . . . That is the real novelty, which has broken up the foundations of the old civilizations.”³

Many of the discoveries which have been achieved by the use of the new scientific method of investigation have had important practical applications and have profoundly

¹ *Novum Organum*, Book I; Aphorism I.

² *Ibid.* Aphorism XIX

³ A. N. Whitehead, *Science and the Modern World*, 1927, pp. 120-1.

affected human life. The Industrial Revolution, which followed the introduction of machinery to do work previously done by hand, resulted in greatly increased production, more varied products, and a general fall in prices. It made available for the use of man additional material resources and generally raised his standard of living; though, unfortunately, through difficulties of distribution, it accentuated class distinctions. It led also to the urbanization of large sections of the population, and to the disappearance of various crafts and forms of skill.

How far scientific invention has been responsible for the present condition of widespread unemployment it is difficult to decide. On the one hand, there is the fact that unemployment only became an obstinate problem after the War, which suggests that the root cause is the complete dislocation of the economic life of the world due to the War. If this be so, the present magnitude¹ of the problem may prove to be temporary. On the other hand, since any big-scale improvement in methods of production, such as, for example, the electrification of an industry, seems inevitably to mean a decrease in the total amount of human labour required, it is difficult to see how we can escape from the vicious circle—more machinery, less work, less purchasing power and therefore a smaller market for the products available, and still less work. Something may be done to alleviate the situation by more scientific control of the consumption and distribution, as well as the production, of goods; but there are limits to the usefulness of such planning.

¹ Some idea of the magnitude of the problem may be realized from the consideration of the unemployment figures of recent years, and particularly of 1933. At the beginning of that year, the number of people out of work in Great Britain amounted to close on 3 millions, and in America exceeded 12 millions.

INCREASED LEISURE

There can be little doubt that the more complete rationalization of industry, agriculture, and commerce, and the increased facilities for transport will mean, in the long run, a permanent decrease in the amount of human labour required. The hours of work in most industries have shown a steady tendency to decrease in the last forty or fifty years. It is highly probable that in the near future, through the redistribution of work in the interests of the majority, there will be a shorter working-day and greatly increased leisure for the workers. How this leisure should be distributed and used is one of the outstanding problems of the near future.

It is not only in industry that the applications of modern science are diminishing the total amount of human labour required. There is a similar saving of time and energy in the home. More convenient houses, better water-supplies and better drainage, more labour-saving devices, and the use of gas and electricity, have already lessened the work of thousands of women. It is true that at present, owing to the difficulty experienced by their men-folk in obtaining employment in certain industries and to the fact that in domestic service supply is still not equal to demand, some women are doing more than usual. They are running their own households and doing outside domestic work for payment. It is also true that many of the common labour-saving devices have not yet reached the homes of the less well-paid workers. But probably both these are temporary conditions. It needs little imagination to recall the many forms of drudgery, which in earlier times fell to the lot of women in ordinary households, but which are

now fast disappearing. There was carpet-beating during spring-cleaning, the carrying of water, coal, and meals along passages or up flights of stairs, cooking and ironing in excessive heat, the hand-washing of clothes and the starching of frocks, the cleaning of lamps and knives, and the constant dusting of furniture and ornaments which was necessary because of smoking chimneys. Now there are gas and electric cookers and heaters, electric lights, refrigerators, telephones, and vacuum cleaners. There is stainless steel cutlery. There are shop jams and cakes and bread which compare favourably in many cases with home products. There are ready-made clothes procurable in almost endless variety of colour and material; and there are steam and other laundries to which clothes and household linen may be sent for cleaning. In general, owing to the rapid rationalization of homes, directly dependent on scientific discoveries, and also to the modern tendency to have smaller families, most middle-class women engaged in the task of home-making have now much more leisure than was usual in the past. They have time and energy to spare, and they also have freedom to enjoy their leisure, either within or outside the home, according to their individual interests.

The widespread application of science to industry, agriculture, commerce, and home-management has not only tended to increase human leisure, but it has also modified the kinds of work in which the majority of individuals are engaged. Work is rapidly tending to become more varied and specialized than it has been in the past. While there are some jobs in industry which are monotonous and almost entirely repetitive, there are others which require highly developed forms of skill in the management of machinery and considerable knowledge of the applied sciences.

Amateurs are being superseded by technological experts and professionals.

Scientific invention has also given man new forms of enjoyment, such as travel by motor or aeroplane, the cinema, talkies, and radio. In many cases, the costs of production are so low that these amenities are available not only for the few, but for large sections of the community.

To sum up, the use of the scientific method of enquiry seems already to have given man greater control of his environment, particularly his physical environment. It has increased his material resources, raised his standard of living and of health, given him a chance of victory over famine and disease, lessened the necessity and occasions for drudgery, increased his leisure and consequently given him more opportunities for recreation and reflection, and a better chance of fullness of life.

Yet it may be true, as Mr. H. G. Wells has pointed out, that "invention and scientific knowledge have taken our hearts and imaginations by surprise. Our social and political ideas, our morals, our ambitions, our courage, have had as yet no corresponding expansion." "Plenty overwhelms us and we do not know how to distribute or use the wealth we can now produce." "Power—gigantic power—has come to us and we can use it only in mutual injury according to the methods of the warring past."¹

The applications of modern science have already led to an unprecedented increase in the horrors of war. The use of tanks, aeroplanes, and submarines, the tremendous increases in the range of guns and the weight of projectiles, and the employment of new high explosives and poison gases have driven some thinkers to wonder whether man

¹ H. G. Wells, *The New America and the New World*, 1935, p. 9.

has not forged a weapon of such power that he will fail to control it, and may even proceed to use it to slay himself and to destroy his civilization.

It cannot be denied that scientific knowledge may be used either to increase or to diminish human happiness. It may, for example, be used to increase war-efficiency and thereby to add to the sum total of human mutilation and suffering ; or it may be applied in the art of medicine to the cure of disease and the maintenance of health. But this is true of all power in the hands of free-will agents. Physical strength may be used to help, or to inflict injury on others ; speech may be employed to encourage, or to wound ; printed books may be illuminating, or libellous ; and governments may be protective, or repressive. Science is no exception to this general rule ; its right use can only be guaranteed where there is a true sense of values and an adequate ethical code.

In attempting to assess the modern scientific movement in relation to human evolution, the order of the appearance of the various sciences is not without significance. Mathematics, physics, and chemistry, and some of the applied sciences dependent on these were well developed before the biological sciences made their appearance. The sciences of psychology and sociology and the applied science of education are even now practically in their infancy. It seemed as though man had to try out the scientific method in investigating the material universe, before he could apply it to the study of living organisms and eventually to the behaviour of human beings. How different might have been the history of the Industrial Revolution if man's understanding of human nature and of human needs had kept pace with his increased knowledge of his physical

environment. It seems not improbable that the Industrial Revolution was only half a revolution, dependent on the growth of the physical sciences. The other half is perhaps still to come through the development of the biological and psychological sciences.

Although psychology is still in its infancy, it has already been proved that scientific methods can be directed equally successfully to the study of the springs of behaviour and to the discovery of the laws which govern mental development as they can to the study of chemical elements and the laws which govern explosions. It is surely safe to predict that just as the development of the physical sciences has increased man's *material* resources and given him greater control of his physical environment, so the development of the psychological sciences will, in the near future, increase his *mental* resources and perhaps enable him to solve the social problems which have been aggravated by his increased, but misdirected, power. Psychology carries with it almost untouched possibilities of self-control, mutual understanding, and group and mass co-operation. The ordered thinking characteristic of science is also beginning to influence educational, economic, social, and political planning.

It is the psychological and social sciences which hold the key to the future of civilization. They represent the present thrust in the direction of further creative evolution along the line of intelligent invention. Their existence and promise are real grounds of hope for the future. Their development and the application of their findings will certainly lead to improved methods of education, more adequate curative treatment, and, in general, to better prospects of abundant life to individuals. They may also have

significant contributions to make to the solution of those social problems, which have been greatly aggravated of recent years, such as unemployment, the distribution of wealth, industrial unrest, and organized warfare.

From this brief consideration of the growth of modern science and of the resulting present tendencies towards increased specialization in work, and greatly increased leisure, certain broad educational generalizations emerge. In order that individuals may adjust themselves to these changed and changing environmental conditions, there will need to be a greater emphasis on *first-hand* knowledge throughout the educational process than has been usual in the past, and a larger place assigned to scientific studies (including the newer biological and psychological studies) at the appropriate stages. While more attention will need to be paid to technical training and to vocational guidance and selection in order to meet the new condition of greater specialization in work, it is also imperative that education should be of such a nature that individuals will be enabled to enjoy their greatly increased leisure and to use it both for their own health and recreation, and for the well-being of society.

CHAPTER III

DEVELOPMENTS IN SOCIAL LIFE

THE growth of the idea of the essential rights of human beings, in virtue of their common humanity, is perhaps the most distinctive feature of the later phases of human evolution. It is true that in some cases the application of this general idea to national forms of government has been checked by post-War difficulties and confusions. The need for the firm handling of the new problems and for rapid adjustment to changing conditions which have arisen from the dislocation by the Great War of the economic life of the world has already resulted, in Italy and Germany, in the appearance of dictatorships; and in Russia, in the operation of the Five-Year Plan with its restrictions to freedom, though in the interests of the many. In America there has also been a New Deal, an earnest attempt by "planning" to meet the unprecedented industrial depression, but this has not been associated so far with the destruction of America's democratic form of government. Indeed the struggle to reconstruct still goes on in an atmosphere of free discussion; and the legality of recent emergency legislation has even been called in question. The President has been given wide powers of action, but, unlike a dictator, he is openly criticized and his authority is both subject to a time limit and can be recalled by resolution of Congress.

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THE GROWTH OF A DEMOCRACY

Britain the development of a political democracy has been slow and sure; and even post-War convulsions have not reversed its trend of development. From the Reform Act of 1832 until the Equal Franchise Act of 1928 movement towards extending the franchise has been relatively steady. It has not been so precipitate as to lead to the cyclic change described by Aristotle from democracy to mobocracy, and thence to autocracy. Since the War there has tended to be a multiplication of departments and permanent officials and an increase in bureaucratic control, the methods of representative parliamentary government have in general been unaltered. The 1928 Equal Franchise Act, which extended the franchise to women on the same terms as to men, practically completed the skeleton of a political democracy.

The skeleton of the democracy must not be interpreted to mean that there is as yet a *functioning* democracy. The

In the present state of electors can still be swayed by leaders who are the masters of the art of oratory; they can be frightened by nervous orators without foundations; and they can be brought to follow slogans and perorations. In the words of Mr. George Bernard Shaw "we are (still) governed by the winning Rights."

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EDUCATION

It is only one way in which the danger of the further growth of the suggestibility of crowds can be lessened, and that is through the education of individuals. Broad educational and other forms of adult education may do something to encourage electors to listen to two or more sides

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of a question. But sometimes when individuals have reached maturity, it is useless to expect them to make unprejudiced judgments. If in childhood and youth they have not been trained to think clearly and to exercise their own intelligence on questions of less importance, they cannot be expected to judge of the social and political questions of great magnitude which confront them as electors. If they have not earlier learned to co-operate with their fellows, they will not be able to prevent their judgments from being wire-pulled by motives of self-interest. In truth, a democracy does not really function until the majority of its members are public-spirited, and have been adequately prepared to discharge their responsibilities as citizens. "There can be no successful democratic society till general education conveys a philosophic outlook."¹

The modern movement towards universal compulsory education is then obviously related to the development of a real democracy. It is the inner spiritual side of the outer reform movement; and things will go sadly amiss if it lags far behind. The establishment of compulsory elementary education in 1870 was certainly a great achievement in this direction; and the provision of secondary and higher education has also steadily increased in recent years.

The present demands for the raising of the school-leaving age and for increasing the provision for adult education derive part of their force from the modern movement towards a functioning democracy. It is being increasingly realized that improvements in the organization of a society cannot be effected by political legislation alone; there must also be a corresponding *push from the human end*.

¹ A. N. Whitehead, *Adventures of Ideas*, 1933, p. 125.

Whereas in the past only certain people or classes had the benefit of a liberal education, under a democratic form of government it is at least necessary for all to be prepared for the responsibilities of citizenship. More than this, as civilization advances, the increased complexity of social organizations adds to the difficulties of social adjustment. These increased difficulties can only be overcome by extending the period for the formal education of individuals. Under present conditions, unless education is universal and is continued into the period of life when individuals naturally adjust themselves to a complex society, a democratic form of government at the best is merely farcical, and at the worst is positively dangerous. Consequently, it is beginning to be generally recognized that in order to make democracy safe, and still more in order to improve existing social organizations, education must be rationally controlled and intelligently developed. It must cease to be the Cinderella of the social services.

THE CHANGING POSITION OF WOMEN

In the early nineteenth century, reformers captivated by the general idea of the essential rights of human beings nerved themselves to face the question of Slavery. In the latter half of the century, their spiritual descendants were facing an almost equally difficult question—that of Women's Rights. As a result, there have been marked changes in the position of women in private and public life, which are important because they are likely to affect the trend of further evolution.

In Great Britain, it was the right to receive a liberal education that was first conceded. Few could have foreseen that the institution of Queen's College for Women in

1848 would have led in a relatively short time to such rapid improvements in the education of girls and women. It led almost immediately (in 1850) to the founding by one of its students, Miss Frances Buss, of the first Public Day School for Girls—the North London Collegiate School. Only a few years later another old student, Miss Dorothea Beale, became Headmistress of the now famous Cheltenham Ladies' College. The work of such pioneers in the cause of the education of girls, and of others, like Miss Emily Davies, who at about the same time were pressing for the admission of women to Universities, has led by easy stages to the provision of facilities for secondary education for girls and higher education for women, comparable in kind, if not in quantity, to those which exist for boys and men. As early as 1878 the University of London conceded equality of status to women; other Universities followed suit, and when in 1919 Oxford admitted women to full membership, there was only one University left in Great Britain (Cambridge) which still perpetuated the earlier anomaly. That position is still maintained and presents a striking contrast to the recent history of women's education in countries which have forsaken democratic forms of government.

Closely related to the demand for education by women was the movement for their political enfranchisement. The first Women's Suffrage societies were formed in 1867; and although they do not appear to have achieved any great success until the passing of the Qualification of Women (County and Borough Councils) Act in 1907, unless the Married Women's Property Act of 1887 can be credited to them, their work led, after the War, to legislation which first enfranchised women over the age of 30

(1918), then opened the doors of the House of Commons to them by the passing of the Sex Disqualification (Removal) Bill in 1919, and in 1928 admitted them to the franchise on the same terms as men.

There is another aspect of the women's movement, namely, the freer entrance into the various professions and other forms of employment, on grounds of merit and suitability rather than of sex. Although in some circles there still appear to be relics of the kind of irrational prejudice which raised such obstacles in the path of Florence Nightingale, when she determined to go in for nursing, and of Elizabeth Garrett Anderson, when she decided to be a doctor, there are now few professions left which women have not penetrated. There are women doctors, lawyers, barristers, engineers, architects, University professors, accountants, and members of Parliament; there are thousands of women teachers and nurses; and there are tens of thousands of women in business, commerce, and domestic service. Their work gives them a measure of economic independence, and of real freedom in planning their own lives. They can, therefore, enter the vocation of marriage not merely under the pressure of circumstances, but of their own free will. Marriage tends, therefore, to become more frequently a companionship of equals. It has already been pointed out that owing to scientific improvements introduced into modern houses the majority of women who now choose the task of home-making have more leisure and freedom than their predecessors. The tendency to equality between husband and wife is even more marked in the uses of leisure than in regard to work; and, rightly directed, this tendency should make for a fuller and happier family life.

The development of women's political, social, and religious organizations and the increasing interest taken by women in local, national, and international problems cannot fail to have some effect on the whole community. For example, Women's Institutes,¹ Townswomen's Guilds, and Women Citizens' Associations have already broken down barriers between social classes, and have widened the horizon of multitudes of women, especially in country districts, where in the past there would have been few contacts with the outside world. Such changes in the lives of women may, or may not, have direct effects on political legislation, but there can be no doubt that they will have far-reaching effects on family life. They already constitute a significant development in the social environment of the next generation of children; and in the future they may become an important means for the further evolution of society.

SOCIAL REFORM AND THE DEMOCRATIZATION OF INDUSTRY

The general idea of the essential rights of human beings has also found expression in recent years in various measures of social reform and in an increasing trend towards socialist legislation. We stand too near to the Russian experiment in Reconstruction to be able to appreciate its full significance; and in any case, as a nation, we are temperamentally averse to sudden changes in social organization. Our own recent history, however, also shows a gradual increase in the control of private enterprise by the community as a whole.

The Old Age Pensions, Trade Boards, and National

¹ For particulars of the educational work of Women's Rural Institutes, see *Report*, H.M.S.O., 1926.

Insurance Acts of the early years of this century were associated with a political party and were initiated by a Government which did not explicitly believe in "the control of capital and the means of production by the State," but they mark a definite departure from the earlier "laissez-faire" policy. The State has since gone on steadily increasing its control of factory conditions, hours of labour, and minimum wages. Since the War, and especially after the temporary economic momentum of the War had passed, the Government had to assume more and more responsibility for the unemployed, and for industry and agriculture generally. There were Unemployment Insurance Acts passed, Government Relief Schemes started, subsidies granted to particular industries, Marketing and Wages Boards set up, and experiments made with tariffs and with the gold standard. All these indicate an increasing realization of the need for Government control of the economic system, if disaster is to be avoided.

The series of labour disputes concerning wages, hours, conditions of work, and victimization during the same period also frequently necessitated Government intervention. The deep-rooted spirit of unrest plainly manifested in labour troubles was not caused, though no doubt it was accentuated, by War exhaustion and disillusionment. It was rather due to the failure of industry to keep step with democracy. Notwithstanding Whitley Councils, it still remains true, as Mr. J. A. R. Marriott has pointed out, that "the democratization of industry has not kept pace with the democratization of politics."¹ There are dictatorships in industry, though there is a democracy in politics. The General Strike of 1926 was an attempt to replace one kind

¹ J. A. R. Marriott, *Modern England*, 1934, p. 507.

of dictatorship by another. But democracy seems to be rooted deep in this country, and it therefore seems probable that progress will not lie in this direction, but rather in the democratization of industry, the increasing control of production and distribution and of conditions of labour, by parliamentary legislation, after free discussion by democratically chosen representatives.

In this connexion, recent developments in America are illuminating. Before the New Deal, American industry had been largely controlled autocratically by big business trusts and by financiers. Faced with the unprecedented depression of 1931 and 1932 America realized the need for Government control, if a complete breakdown was to be avoided. Accordingly President Roosevelt was given powers (with certain safeguards) to alter conditions of industry, impose tariffs, restrict production, control banks, and even inflate currency. The Unemployment Relief, the Agriculture Adjustment, and the National Industrial Recovery Acts followed one another in quick succession, and indicate a big-scale, if dubiously successful, attempt to control the economic and industrial systems in the interests of the community.

The present tendency towards increased State control of industry, housing, health, and education, is not without its dangers. There will be more Government departments and there may be armies of new officials and inspectors who will tend to interfere with the freedom of individuals. The chief safeguard against this danger of an encroaching bureaucracy is already being provided by the simultaneous growth of *free* organizations of individuals for every conceivable purpose. Some of these, such as professional organizations, scientific and other learned societies, and

religious bodies, are partly international in character. In their special spheres, they speak with authority. Consequently, they are usually able to protect their members from illegitimate State interference.

INTERNATIONALISM

The modern world is an interdependent world. Notwithstanding the variety and diversity of nations, which call for the loyalty and in some cases the passionate devotion of their members, it is evident that recently there has been at work a powerful movement, gathering momentum from various sources, in the direction of greater international co-operation. The improved facilities for travel and the quicker methods of communication now available have virtually brought the ends of the earth closer together. Consequently, there are more opportunities for members of different nations, who have common interests, to come into personal contact with one another. For example, there are international sports meetings, scout jamborees, and holiday courses for students. There are more exchange visits between school children, students, and teachers of different countries. There are more frequent conferences between scientists, trade-union officials, and professional groups drawn from different nations. There are more permanent international organizations of political, social, educational, and religious groups. In short, there is already a considerable measure of social intercourse and informal co-operation between the corresponding sections of the various nations.

Trade and commerce have also made a distinctive contribution to the growth of a world community. The business agents of one nation penetrate many other coun-

tries ; and there is constant interchange of commodities between nations. Although the erection of tariff walls seems to indicate an active tendency in most countries towards self-sufficing production, there is a growing realization in many quarters of the failure of unbridled competition and of the desirability of international agreements concerning conditions of labour and currency stabilization.

The growth of science and the constant co-operation, both direct and indirect, between scientific workers in different countries has also tended towards the development of a true internationalism. It is in such intellectual co-operation that the unity of mankind has so far most successfully expressed itself, though the value of international co-operation in politics and economics has also long been recognized.

Even before the Great War there were many occasions for discussion and agreement between nations concerning such problems as postage, navigation, copyrights, the liquor traffic, and armaments. The Hague Conferences, although relatively ineffective, at least showed that it was being increasingly realized that one of the primary duties of governments is to develop and regulate the relations of states to one another. The greatest advance in this direction was made by the growth of international law.

Then came the Great War, which was supposed in some quarters to be a war to end war. It is estimated that Great Britain and her colonies alone contributed nearly 9½ million men to the Services. Of these, over 3¼ millions were reported as killed, wounded, and missing. Those who actually gave their lives were little short of a million. The cost to the Exchequer, apart from money lent to the Allies,

totalled £9,590,000,000; and 9 million tons of shipping valued at £750,000,000 were also destroyed.¹ Other participators suffered similar losses; and at the end the War settled nothing. When we also remember the pain and disablement of body and the agony and conflict of mind of those who survived, the resulting aftermath of deprivation and unemployment, the loss to civilization of the creative work and spiritual leadership of many of the most outstanding men of the War generation, and the curtailing of educational opportunities to the children of the next generation, we are forced to ask, "Where is thy victory?" The common experience of suffering due to the War has led many throughout the world to a realization of the irrationality of war, and has emphasized the need to seek other means for the settlement of disputes between nations.

Whatever doubts may have been recently entertained concerning the effectiveness of *political* methods of co-operation, the setting up of the League of Nations, with its Assembly and Council, its Court of International Justice, and its Secretariat or International Civil Service, marked a new beginning in regard to the settlement of disputes between national groups. Though there are notable exceptions, most of the chief countries of the world are now members of the League, pledged to its Covenant "to promote international co-operation and to achieve international peace and security."²

Mr. H. G. Wells has pointed out in his own striking way how with the growth of scientific invention the war danger has assumed a new magnitude and indeed a new quality;

¹ For these facts I am indebted to J. A. R. Marriott's *Modern England*, Chaps. XXI and XXII.

² The Preamble of the Covenant, 1919.

for war "has changed to something monstrous and dreadful and anti-human." He adds that although this has been widely realized, "humanity is doing remarkably little to arrest this swelling and advancing menace."¹

Mr. Wells's warning is certainly needed, for the race in armaments between nations who are members of the League still continues, and the League has recently been so ineffective, especially in the Italo-Abyssinian dispute, that some of its keenest supporters are beginning to wonder whether it can really function in its present form. But even if the actual organization were to disappear, the importance of this modern attempt to promote international co-operation could hardly be exaggerated. Whatever its own future may be, the League will have prepared the way for other experiments which will go deeper and which may eventually lead to mutual understanding and real peace between the nations of the world.

"I, for one," says Dr. L. P. Jacks, "should despair of the League were it not for my belief that its chances lie in a different field altogether. As I see the matter, only a cultural civilization can solve the problem of a community of nations. . . . No doubt it had to begin as a political experiment. But our very failures to carry it out on political ground, which are becoming more apparent every day, will open our eyes to the necessity of solving it on a higher level."²

Since Dr. Jacks wrote these words, the League itself has been emphasizing the need for "Moral" as well as "Physical Disarmament." It has set up various sub-committees to consider the "training of the younger gen-

¹ H. G. Wells, *The New America and the New World*, 1935, p. 11.

² L. P. Jacks, *A Living Universe*, 1923, p. 84.

eration to regard international co-operation as the normal method of conducting world affairs." It is realizing, though so far without much psychological insight, the need for educating for peace.

Judging from the history of other great ideas, it is probable that the movement towards world co-operation, of which the League of Nations is one imperfect expression, will develop slowly. "Successful progress," says Professor Whitehead, "creeps from point to point, testing each step."¹ The idea of international co-operation is, however, already an essential feature of the living present, to which individuals now being educated should be helped to adjust themselves. In this way further progress will be made; and it may be that eventually there will occur that drastic revision of the existing ethical code of civilized nations necessary for the real solution of the problem of war.

The movement towards a functioning democracy has already been shown to increase the urgency of the demand for extended provision for education. We must certainly "educate our masters"; and in a democracy this means women as well as men, girls as well as boys, and all in accordance with their innate abilities. The growth of internationalism should also be one of the most influential factors, from the environmental side, in determining the content of the curricula and the general nature of the training to be given as a preparation for the fulfilment of the responsibilities of citizenship in a democracy.

¹ A. N. Whitehead, *Adventures of Ideas*, 1933, p. 24.

CHAPTER IV

DEVELOPMENTS IN ETHICS AND RELIGION

THE last two chapters, which were concerned with two outstanding lines of human evolution, namely, the growth of modern science and the chief developments in social organizations, both ended on the same note. They pointed to the urgent need for commensurate moral developments. Difficult as the task may be, it is therefore necessary to examine the position of religion in modern life and to consider what changes in the accepted moral code seem to be foreshadowed.

Religion has been defined by Dr. R. H. Thouless as "a felt practical relationship with what is believed in as a superhuman being or beings."¹ It has an intellectual side (belief in a superhuman being or beings); but the behaviour and emotional aspects are also important. Perhaps Thouless has unduly narrowed the conception of religion by his assumption that there must be belief in a person or persons. There must be some measure of intuition into the underlying mystery of the Universe, some vision of an ultimate ideal beyond the world of sense-experience, some faith in the divine and holy as the supreme reality; but whether this need be conceived of in terms of a person in order to evoke the distinctively religious attitude of worship is somewhat doubtful. There are, of course, social and traditional elements in all religions which partly deter-

¹ R. H. Thouless, *An Introduction to the Psychology of Religion*, 1923, p. 4.

mine their form ; but in a very real sense a living religion is always "an adventure of the spirit, a flight after the unattainable."

It is frequently stated that the growth of science and the increasing mechanization of human life in Western civilization has caused a decay of religion. The common complaints made by various religious bodies regarding the falling off of membership of churches, the lack of observance of the Sabbath, and the diminution of interest in theological controversies and sectarian differences may or may not indicate a real decadence in religion and ethics. If these changes issue from the hurry, bustle, and mechanization of modern life and are associated with growing desires in the minds of the majority of individuals for comfort, excitement, and luxury, if they indicate a false contentment with the world of sense-experience and a repression of spiritual adventure, then they are serious symptoms. But if they signify that the mere compulsion of tradition is losing its force, then it may very well be that mankind is in one of its moods of shifting its outlook before the undertaking of fresh spiritual adventures. To which of these two alternatives does the balance of evidence really point ?

The present organized forms of religion are certainly on the defensive. "Protestant Christianity," says Professor Whitehead, "so far as concerns the institutional and dogmatic forms in which it flourished for three hundred years as derived from Luther, Calvin, and the Anglican Settlement, is showing all the signs of a steady decay. Its dogmas no longer dominate; its divisions no longer interest; its institutions no longer direct the patterns of life."¹

¹ A. N. Whitehead, *Adventures of Ideas*, 1933, p. 205. Ch. 13.

Other movements of civilization have forged ahead while the presentation by the churches of spiritual truths tends to be in terms suited to earlier times. For example, the recent advance of science should have resulted in far greater modification of religious thought than has so far been evident. In a recent enquiry¹ concerning the religious experiences of a group of University students, it was discovered that the most commonly occurring doubt during and after the religious awakening characteristic of adolescence was concerned with the squaring of the biblical interpretation of creation with the modern scientific theory of evolution. Yet these earlier views concerning the precise methods of creation are adventitious notions which could be disengaged from the presentation of the essential elements of religion.

The opposition between Science and Theology, which was such a marked feature of the second half of the nineteenth century, has in certain directions appreciably diminished. The chances of a real reconciliation have been greatly increased as the respective functions of scientific and theological interpretation of the world have become more clearly differentiated.

While the history of science has continued to present a striking contrast to that of theology in the steadiness of its progress and its uninterrupted conquest of the forces of Nature, there can be no doubt that the spirit of twentieth-century science is less dogmatic and more modest than was that of the nineteenth century. It has the humility of greatness. It does not claim, as Auguste Comte did, that its descriptions are destined to supersede theological and metaphysical interpretations of the Universe.

¹ O. A. Wheeler, *Youth*, 1929. Chap. 13.

According to Comte's formulation of the "law of progress" there are three stages in the development of every branch of knowledge—the theological, the metaphysical, and the scientific. In the first stage, physical processes are explained by persons; in the second, by metaphysical entities which might be termed shadows of persons. "The spirit of all theological and metaphysical philosophy," he says, "consists in conceiving of all phenomena as analogous to the only one which is known by immediate consciousness, Life."¹ In the third stage, man finds out that the function of knowledge is to ascertain relations, and he therefore gives up the search for causes and concentrates his efforts on the discovery of those invariable natural laws which appear to govern phenomena. This view that science is destined to supersede theological interpretations was not uncommon among nineteenth-century scientists. "Anyone," says T. H. Huxley, "who is acquainted with the history of science will admit that its progress in all ages meant, and now more than ever means, the extension of the province of what we call matter and causation, and the concomitant banishment from all regions of human thought of what we call spirit and spontaneity."²

The recent rapid development of the biological and psychological sciences has had the effect of making the twentieth-century scientist much less certain of the doctrine of universal mechanism, which Huxley so light-heartedly accepted, and much more inclined to ask the question, Is there or can there be *one* science of Nature? The biologist takes a relatively synthetic view of the activity of an organism. He believes that merely to analyse it into a

¹ A. Comte, *Positive Philosophy*, tr. Martineau, Vol. I, p. 239.

² T. H. Huxley, *Collected Essays*, Vol. I.

series of chemical and physical reactions is to eliminate the essential—that which Professor J. A. Thomson once called the “go” of it. He therefore makes use of distinctive concepts, such as function, adaptation, wholeness, and evolution, in his interpretations which would certainly not be legitimate for the physicist or chemist, whose approach is more analytic. Similarly, psychologists—with the single exception of the Behaviourist School—use auxiliary concepts, such as consciousness, perception, imagination, and emotion, for the interpretation of behaviour, which could only have been derived from an analysis of immediate inner experience.

In general, if the various sciences be arranged in a series in order of decreasing abstraction, from Mathematics and Mechanics, through Physics and Chemistry to Biology and Psychology, it will be found that the auxiliary concepts used in each case are in ascending order in regard to the degree of ejection (or anthropomorphism) involved.¹ The use of “ejective” concepts in Biology and Psychology for the synthetic interpretation of the activities of an organism is undoubtedly a conceiving of certain phenomena “as analogous to the only one which is known by immediate consciousness, Life.” It is therefore “theological” or “metaphysical” in the Comtian sense. Thus, within modern science itself, there are various interpretations of phenomena which are not all rigidly mechanistic or “positive.”

If it be permissible for science to have these various interpretations of a group of data for different purposes, it is surely also permissible to have co-existing interpretations

¹ For a detailed analysis of the concepts used by the various sciences, on which this view is based, see O. A. Wheeler, *Anthropomorphism and Science*, Part III.

of the whole Universe, depending on different auxiliary concepts, according to the purposes in view.

Laplace's imaginary mind—the type of a purely analytic scientist—viewed the Universe as a dull uniformity of necessary and quantitative relations. It ignored the rich individuality of things, even of living organisms, and concentrated on the relations of parts; it proceeded by abstraction. The enlightened scientific empiricist of the twentieth century recognizes that such a mechanistic view is only relative. It is dependent on the implied purpose, which is not to reveal the ultimate meaning of the Universe, but rather to furnish us with the best means of acting on our environment.

Bergson has made a characteristic contribution to the solution of this problem of the relationship between mechanistic and metaphysical interpretations of the Universe. "We are geometricians," he says, "only because we are artisans." It is our need for action which makes us analyse and spatialize Nature. Viewed disinterestedly and not merely relatively to our need for acting on it, reality is not static and spread out in space, but is essentially a duration, a process, an unfolding in time. Bergson's protest against spatialization is a protest against taking the mechanistic view of Nature as being anything except an abstraction. He maintains that it is by the method of intuition, and not by analysis without regard to their natural articulations, that durations can be grasped. Viewed in this way, the Universe reveals itself as a *living* Universe, unfolding in time and evolving creatively.

Bergson's doctrine of intuition and his whole philosophical position have been subjected to various criticisms, which cannot be examined here in detail. It is probable

that he has made the distinction between intuition and intellectual analysis too sharp ; and that his conception of duration, which involves no element of purpose, is artificial. Alexander has shown that there are difficulties in Bergson's sharply contrasted treatment of space and time. Whatever may be the outcome of these criticisms, Bergson's contribution remains outstandingly significant because of its relationship to modern science. He has moved away from the scientific materialism of the last century. He has proved that the doctrine of universal mechanism is the result of abstraction. He has shown that the concepts derived from the physical sciences, such as matter, space, and causation, are inadequate for the interpretation of the organic whole. We do not grasp reality, as it is in itself, when we try to know parts of it in terms of other parts, without regard to its articulations. For the knowledge of an organic whole is different from the successive knowledge of each of its parts ; it is the holding together of all these parts in one intuition or one process of philosophical reflexion. To attain to such knowledge is the special function of metaphysics, which will, and must, employ " organic " and " spiritual " concepts for the fulfilment of its purpose. It is also the function of Theology, which does not hesitate to use the idea of God to gain a synthetic view of the whole of creation. One God—

" Who stretchest out the heavens like a curtain :
 Who layeth the beams of His chambers in the waters :
 Who maketh the clouds His chariot :
 Who walketh upon the wings of the wind :
 Who laid the foundations of the earth
 That it should not be removed for ever . . .
 He appointed the moon for seasons :
 The sun knoweth his going down."

There is then a place for intuitive views of the Universe,

side by side with, and complementary to, the analytic descriptions of science. No doubt there will be controversies between religion and science in the future as there have been in the past. But, faced in the right spirit, these clashes need not be disasters, but may be opportunities for the discovery of wider truths and finer perspectives. The chief difficulty in the way of real advance at present is due to the fact that organized religion, which conserves so many vital spiritual truths, is inclined to ignore the recent discoveries of science, and consequently to cling to forms and dogmas, which may have been useful in the past but no longer synthesize all the relevant facts of experience. According to von Hügel, the danger in this direction is constant and profound. "For to starve or to suspect, to cramp or to crush this phenomenal apprehension and investigation in the supposed interest of the ulterior truths must ever be a besetting temptation and weakness for the religious instinct."¹

Never has the need for a religious outlook and a controlling ethical code been greater than it is to-day, when man has such greatly increased power over physical forces. Never has it been more necessary that spiritual values should be emphasized, if disaster to the whole human race is to be averted. Yet organized religion is less compelling and influential than it has been in the past, largely because its formulæ have become fixed and its ethics have become conventionalized. "It will not regain its old power," says Professor Whitehead, "until it can face change in the same spirit as does science."² To be effective in influencing modern life, it must be adventurous, welcoming

¹ Baron von Hügel, *The Mystical Element in Religion*.

² A. N. Whitehead, *Science and the Modern World*, 1927, p. 234.

new mystical revelations, taking account of new scientific discoveries, and incorporating into itself changes in social organization.

Most religious institutions have lagged behind in incorporating into their organization characteristic modern developments in social life. They have, for example, only half-heartedly recognized the changing position of women in modern societies. The Roman Catholic and Anglican priesthoods are still closed to women. In many Non-conformist denominations, too, church government is almost entirely in the hands of men. It is a curious anomaly that religious bodies, which are primarily concerned with the "souls" of individuals, should have been slower to recognize the spiritual equality of men and women than professional, political, and other secular organizations, which are concerned with lower levels of the functioning of individuals. One would have expected the exact opposite, that the Churches would have led the way in the practical recognition of the supreme value of the human individual, irrespective of sex or class. The Pauline view that women should be silent in the churches was no doubt useful at the time of its origin; but by becoming a fixed formula it has impeded progress, and has now put organized religion out of step with one of the characteristic developments of modern life.

Another feature that has undoubtedly shaken the loyalty of the younger generation to organized religion has been the slowness of all Christian denominations, with the possible exception of the Quakers, to apply the Christian ethic to the solution of such greatly aggravated modern problems as the distribution of wealth, capital and labour, and organized warfare.

During the War, the moral witness of the Christian Churches on both sides was confused and vacillating. No one could reasonably blame organized religion for the catastrophe itself; but the attitude of many religious leaders in the face of the disaster was enough to hasten the decadence, not of the Christian faith itself, but of the organizations with which they were associated. Some of them, on both sides, preached recruiting sermons and prayed to God for victory over their enemies. Few of them gave any moral support to the genuine conscientious objector. Even some of the most earnest of them virtually denied, for the time being, the gospel of love, which they had been wont to extol. They conceived of God as punishing the nations for their sins by the War, forcing them, as it were, to their knees by catastrophe; they represented Him as power and not persuasion, as One requiring repentance rather than worship and love. In general, the witness of organized religion during the War was largely inconsistent with the Christian ethic, and consequently served to alienate many of the more adventurous spirits of this generation. It is this which largely accounts for the seeming decadence of religion during, and immediately after, the War period.

At the centre of the Christian religion is the creative idea that the divine, whether in individuals or in the Universe as a whole, uses persuasion and not force. "He that loveth not knoweth not God; for God is love. . . . He that abideth in love abideth in God, and God abideth in him."¹ "God is Love: I build my faith on that." It is true that there has been a failure to translate this idea into practice and to apply it to the special problem of organized warfare

¹ I John iv. 8 and 16.

between nations. But great ideas are seldom, if ever, put into practice without a succession of efforts and partial defeats. They are like the sea, which beats wave after wave against the cliff of custom. No one wave effects a real change, but if the succession continues the cliff will be worn away. The creative idea will issue eventually in practical consequences.

There are signs at present, both within organized Christianity and outside it, of a deeper realization of the meaning of the Christian ethic as applied to war, and a greater willingness to explore its practicability. It is surely not without general significance that some of the most intelligent and forward-looking representatives of modern youth, notably University students, have spoken in less uncertain accents than even Christian organizations of the past concerning the immorality of the settlement of disputes between nations by war. The dangerous quest of the ideal is being pursued more vigorously, the next step in moral evolution is being contemplated more wholeheartedly by them than by more conventional and less adventurous members of religious bodies. This can only mean that another wave is forming which will beat again against the established tradition of warfare. It is by a succession of such waves that the Christian idea will eventually issue into practical consequences, and organized warfare will disappear from civilization as the custom of slavery did after repeated efforts in the past.

This is the great advance in human history which is now foreshadowed and for which preparations are already in being. It will be safe to prophesy that the religious bodies, and, indeed, the individuals, who will be destined to play the largest part in this spiritual adventure will be

those with a dynamic, and not a static, religion ; those who succeed in preserving open minds to new mystical experiences and who are willing to discard outworn creeds and formulæ ; those who are prepared to take risks for the sake of the future.

There would be an enormous advantage gained if religious opinions of analogous types could be kept together, and religious bodies could learn to understand, and to co-operate with, one another for the fulfilment of their common purposes. One of the most progressive features of modern thought has been the increasing realization that "there is something true and divinely revealed in every religion." The new sense of historical continuity in religion and of the gradual evolution of the divine in man has led on the whole to a wider tolerance, and has prepared the way for a deeper unity. When organized religion, while retaining its insight into the meaning of the Universe, yet faces change in the same spirit as does modern science, it will become the dynamic power capable of drastic moral revision of established customs. It will again become the common basis for the unity of civilization.

The most significant conclusion which emerges from the consideration of the living present is the need for emphasizing the social, moral, and religious aspects of education. The new material resources now in the hands of the individual, through the conquests of modern science, and his increased power to influence society, through trade-union or professional organization and through the exercise of the rights of citizenship, make it absolutely essential that his education should be more than technical, or even intellectual. Primary emphasis must be placed on the training of character, for modern conditions in a demo-

cracy, by extending the individual's physical powers and social responsibilities, have increased his potentialities both for good and for evil. Education, then, needs to be religious in the broadest sense, so that there may develop in each individual an enrichment of life through appreciation of the divine and holy, an adequate moral code, and real enlightenment concerning the services which should be rendered to the community and to living creative evolution.

SECTION TWO
THE LIVING INDIVIDUALS

CHAPTER V

THE DEVELOPMENT OF THE INDIVIDUAL

COMPARED with other animals, the human individual at birth is characterized by almost startling immaturity, notwithstanding the long period of gestation. The baby has many adjustments to make before he can become in any sense self-sufficient. He is far removed from his goal of full humanity. He has, however, unusual powers of intelligent learning, and he has also a long period of infancy and childhood (tending to become even longer as civilization advances) in which to develop his own powers and to adjust himself to his complex environment. Were it not for the high degree of parental responsibility commonly found in the human species, this long period of learning and experimentation would certainly be useless, and might even be dangerous. But the deep-set desire to protect the young and to give each a chance of full development is not only found in parents in respect of their own children, but is also a common spring of behaviour in other adults, especially in civilized societies, and is reflected in their educational systems.

The Wordsworthian view that "heaven lies about us in our infancy," that "trailing clouds of glory do we come from God, who is our home,"¹ appears to be an inversion of the usual scientific hypothesis suggested by the facts of human behaviour and particularly of infant behaviour.

¹ W. Wordsworth, *Ode on Intimations of Immortality*.

But it does draw our attention to the truth, so often complacently forgotten, that the process of growth may go seriously wrong ; the last stage of the individual be worse than the first. Even when things go right, it is only by a long process, sometimes involving conscious effort and more often issuing from deeper living impulses, that full humanity is eventually attained. "We press forward to the mark of the high calling. . . ." In a sense, the glory is before rather than behind. In a deeper sense, it is *in* the process of development and enrichment towards the fulfilment of human destiny.

What is there at the beginning ? Is the new individual a blank sheet on which impressions may be made as upon wax ? Or are there writings already on the tablet, the marks maybe of near or distant ancestors ?

We know too little concerning the laws of inheritance to be dogmatic concerning the physical and mental qualities which an individual is likely to inherit from his immediate forefathers. Modern scientific opinion tends to the view that modifications *acquired* during the life-time of the parent are not passed on to his or her descendants, while *native* characteristics tend to be transmitted. In any case, there are so many near ancestors and such a complexity of inter-related factors operative, that the *special* inheritance of any individual can be more easily and accurately discovered by direct observation of his behaviour than by the adoption of the most up-to-date and well-founded inheritance hypothesis.

APPETITES AND INSTINCTS

There are, however, certain inherited tendencies, *common* to all human beings, which appear to have been evolved

in the process of the adaptation of the species to its environment, and which provide the starting-points of individual development. These are the appetites and instincts. The distinction drawn by Drever¹ between appetites and instincts is useful for the sake of clearness of exposition. Appetites, such as hunger, come into operation as a result of conditions within the body ; whereas instincts, such as pugnacity, come into play in response to the appearance of certain objects or to the absence of certain conditions in the environment. Both, however, are innate ; that is, they do not arise as a result of the individual's own experience, but are rather the inherited tendencies from which development proceeds.

THE APPETITES

There can be no doubt that hunger, thirst, elimination, the desire for sleep and for change are most important organic tendencies affecting the early experiences of children. In connexion with each of these appetites there is a specific form of response present at birth in the normal child, which makes possible an adequate adjustment, providing that the environmental factors are appropriate. For example, the infant, if given food, is able to suck and swallow, thus initiating the whole digestive process. Similarly, the infant is able to fall asleep when tired. These are some of his earliest satisfactions, which ensure his bodily development ; and his first dawnings of consciousness arise from them. These appetites, rightly interpreted, are Nature's ways of ensuring at one and the same time the physical and mental development of the individual. They are the most primitive expressions of the life-impulse, which tends ever towards the enrichment of personality.

¹ J. Drever, *Instinct in Man*, 1917.

There is considerable disagreement among modern psychologists concerning the part played by a sixth appetite—sex—in the early stages of life. Freud¹ holds that even in babyhood it plays an important part. He affirms that at an early period, before feelings of shame and disgust arise to check natural impulses, children frequently stimulate their sex organs and find satisfaction in so doing. He even goes so far as to regard thumb-sucking as essentially a sexual process. On the other hand, McDougall² argues with considerable force and judgment that in normal cases the sexual appetite does not begin to function until about the age of 8 years, and even then it is weak and vaguely directed. It is highly probable that Freud's concentration on neurotic patients has made him exaggerate the rôle of sex. The abnormal minority, from the study of whom he obtains his generalizations, may indeed give evidence of the precocious awakening of sex, but in the case of the great majority of young children this appetite seems to be inoperative. Freud does not seem to have realized that elements may be separately present in the experience of children and yet not be combined into a configuration comparable to the sex-impulse of the adolescent or adult; consequently, it may be true to say that the sex-appetite has not yet appeared in their case.

THE INSTINCTS

In addition to the appetites, there are also other impulses which are innate and which must be taken into account in any serious attempt to understand child life. These are the instincts, the ready-made tendencies to *know* certain objects, and to *feel* and to tend to *react* towards them in

¹ Freud, *Three Contributions to the Sexual Theory*, 1910.

² W. McDougall, *Social Psychology*, Supplementary Chapter, 1917 Edition.

certain ways. For example, a tiny child will sometimes run and hide when he sees for the first time a bear or some other strange animal. This impulse is not the result of experience. He has had no previous experience of the animal in question. But there is within him an inherited tendency to notice the animal, and to feel fear in its presence, and consequently to take refuge in flight. This instinct obviously has a biological value; it tends towards the preservation of the individual. But what is not quite so obvious is that it has a psychological significance, and that the parent or teacher who treats the child as though the impulse were non-existent is courting disaster. It is one of the springs of the child's conduct, and he will never be understood so long as it is ignored. If he is to be rightly and sympathetically treated, the basis of his character must be sought in these inborn tendencies of his nature. And the recent attempts of psychologists to discover the chief instincts of man are therefore of interest to all who are responsible for the upbringing of young children.

According to McDougall¹ man possesses seven primary instincts, corresponding to the seven simple and unanalysable emotions experienced by him. These are:

Flight, corresponding to the emotion of fear.

Repulsion, corresponding to the emotion of disgust.

Curiosity, corresponding to the emotion of wonder.

Pugnacity, corresponding to the emotion of anger.

Self-assertion, corresponding to the emotion of elation.

Self-abasement, corresponding to the emotion of subjection.

The parental instinct, corresponding to the tender emotion.

¹ W. McDougall, *Social Psychology*, 1908.

There are also other instincts, such as reproduction, acquisition, constructiveness, and gregariousness; and there are pseudo-instincts, such as suggestion, imitation, sympathy, and play, which are distinguishable from instincts in that they are *general* innate tendencies without distinctive specific emotions. McDougall's work has certainly opened the way for further advances, and more recently Drever¹ has succeeded in evolving a methodical classification of the innate tendencies of man. He regards nausea (McDougall's repulsion) as an appetite, but otherwise gives the same list as McDougall, except that he adds hunting, acquisitiveness, and courtship to the instincts, and experimentation to the pseudo-instincts. Thorndike's² list of man's instincts is even larger, for he separates the many *specific* tendencies, which McDougall groups together as one *general* innate tendency. On the other hand, Tansley³ affirms that there are only two main inherited impulses, the first *egoistic*, directed towards the preservation and development of the self, and the second *social*, directed towards the preservation and the good of the species.

It is not difficult to relate these various views. The creative life-impulse within each individual is canalized, as Tansley affirms, with two main streams making for the preservation of the self and the well-being of society. These in turn may be regarded as further differentiated into the instincts recognized by McDougall and Drever; the main tendency towards self-preservation into flight, repulsion, curiosity, pugnacity, self-assertion, self-abasement, and acquisition; and the social tendency into the parental

¹ J. Drever, *Instinct in Man*, 1917.

² E. L. Thorndike, *Educational Psychology*, 1914.

³ A. G. Tansley, *The New Psychology*, 1920.

instinct, reproduction, gregariousness, imitation, and play. Further subdivision would result in Thorndike's list.

McDougall's view proves particularly useful for the understanding of the behaviour of young children ; and is less open to theoretical objection if the instincts distinguished by him are regarded rather as differentiated and related expressions of the life-impulse than as separate entities. With the exception of reproduction, all the instincts and pseudo-instincts recognized by him come into play during infancy, and, with the appetites, are usually regarded as the bases from which development proceeds.

GENERAL PRINCIPLES OF DEVELOPMENT

The once popular view that the individual passes through stages of development corresponding to the chief culture epochs through which the race has advanced from savagery to civilization is now almost entirely discredited. The positive data on which the theory was supposed to rest, such as the resemblances between young children and savages, were frequently found to disappear when they were more completely analysed ; and the opposing evidence of the powerful influence exerted by the social environment on the development of the individual led to the realization that, even if there were an inherent tendency in the individual to reflect these racial epochs, his early life in a highly civilized community would so foreshorten and modify the stages that the resulting course of development could not be predicted even in roughest outline by the use of the hypothesis. On this account the Culture Epoch Theory was quickly superseded by other more tenable views of individual development.

Some thinkers, like Professor Henri Bergson, put forward the view that individual development comes mainly from within; and that there is a creative impulse (*élan vital*) within each living individual which directs his growth and to that end utilizes the outer environment. On the other hand, many educationists have stressed the importance of the environment, and particularly of the social environment, in determining the development of the individual. They instance cases where, owing to lack of educational opportunities, progress appears to have been retarded, if not stopped. Stern's view that individual development is "the result of a *convergence* between inner qualities and outer conditions of development"¹ seems at first sight to be a possible compromise between the two extremes, but further consideration shows it to be a false simplification of the intricate and varied facts of human development. There is, as Koffka² has shown, a very real distinction between two kinds of development, namely *maturation* and *learning*. The duckling brought up with a brood of chickens will surprise, and it may be distress, its foster-mother by its first unrehearsed, yet successful, attempt to swim. The development of the power to swim is here a case of *maturation*. But the boy who sets out to learn to swim and who to that end practises separate actions in the water, upheld by an air-bladder or a trainer, may eventually acquire skill in the art of swimming, comparable to that of the duck. The process of development in his case, however, is essentially a *learning* in the hard school of experience.

Although there may be "a convergence between inner

¹ W. Stern, *Psychology of Early Childhood*, 1924 ed., p. 51.

² K. Koffka, *The Growth of the Mind*, 1924, pp. 38-9.

qualities and outer conditions" in both types of development, it is obvious that the inner qualities are the dominant partner in the first case though perhaps not in the second. With this distinction in mind, it will be seen that one of the most satisfying approaches to the understanding of the general principles of human development is that outlined by Rivers in his book entitled *Instinct and the Unconscious*,¹ for he clearly recognizes that an individual may modify his primitive behaviour either as the result of his own experiences or through suggestion—that process "whereby one mind acts upon another unwittingly." This view contributes an important element to the guiding hypothesis which will here be adopted to relate the varied facts of individual development.

Suppose, as Bergson maintains, that there is a life-impulse within each individual, which reclines on a long racial past and yet is ever creative, then it is this which mainly determines processes of maturation. The various inherited tendencies common to man, and usually known as appetites and instincts, are forms of expressions of this original creative impulse. They are essentially dynamic, and function of their own momentum in the early stages, or as soon as they have gathered sufficient momentum by maturation. Man, however, possesses two distinctive features which quickly enable him to modify and control his appetites and instincts, namely, *his power of learning from his own experience*, and *his sociability*.

For example, the early appetite of hunger is a dynamic impulse which makes for the preservation and development of the individual. It may be expressed at first in primitive fashion. But an intelligent child quickly learns,

¹ Cambridge University Press, 1920, p. 99.

even when supervision is withdrawn, to control the appetite in such a way as to avoid unpleasant after-effects. This is a development that occurs through his power of profiting by his own experience. Fortunately, there is also another way of learning open to him. Owing to his sociability, and particularly to his tendency to imitate his fellows, he frequently avoids having to suffer the unpleasant experience himself. For example, he may learn to satisfy his appetite of hunger without cramming his mouth full of food, not by his own painful experience of choking, but simply because he tends to adopt on trust the table manners of his own family group. The early appetitive and instinctive forms of behaviour soon become overlaid with *intelligent* and *suggested* modifications.

Man is not greatly different from the "lower" animals in respect to his instinctive equipment, but he is profoundly different in the controls of that inheritance which he is able to develop by his intelligence and sociability.

As the individual matures, the cognitive and behaviour aspects of any and every appetite and instinct may be modified. For example, the instinct of pugnacity may express itself in the early stages of an individual's life in the primitive form of hitting the opponent. Given ordinary intelligence and a "civilized" social environment it will, however, soon be modified. It may express itself in adolescence in team games rather than in actual fighting; and in adult life its energy may be diverted into a struggle against poverty or disease, or a determination to subdue Nature and to wrest her secrets from her. Professor Pierre Bovet¹ has shown how this same instinct, in a sublimated form, provided the motive power for such difficult work as

¹ P. Bovet, *The Fighting Instinct*, 1923, pp. 121-4.

that of the founder of the Salvation Army. General Booth was a fighter, but a fighter whose anger was not directed against individuals, but against sin and degradation. His resulting behaviour was not the aboriginal mode of response of hitting someone; but rather consisted of sustained efforts, in the face of ridicule and opposition, to rescue men and women from the evil which he was combating.

Although the appetites and instincts should be controlled, and their expressions modified and socialized, as the individual develops, they should never be repressed. We are only just beginning to realize, largely through the work of the psycho-analytic school of psychologists, how great is the danger of the repression of these dynamic forces of the mind, and how appalling are the disasters that result from such repression. It has been shown beyond all doubt that a powerful innate impulse does not cease to exist when it is denied expression. It may be driven into the unconscious, and find for itself surreptitious and indirect modes of expression.

For example, Jüing quotes the case of a neurotic, who was extremely irritated by the pealing of some church bells. He described them as harsh and unmusical, whereas they were really noted for their singular purity of tone. On investigation, it became apparent that the real cause of the distorted judgment of the bells was jealousy of the clergyman who was attached to the church in which the bells were hung, and who happened to be a more successful rival poet. By the pressure of the usages of civilized society, the instinct of self-assertion had been repressed in the mind of the patient. It had not been allowed to express itself in an attempt to injure his rival. Nor had its

existence been recognized and the conflict between it and the higher moral code been openly solved. The patient was not aware that it was operative. He had thrust it below the level of consciousness, but it had not been really conquered. The result was that it expressed itself by the indirect path of unjustified criticism of the church bells that happened to be closely associated with the objectionable clergyman. The powerful impulse did not cease to exist when it was denied expression. Rather it remained as a dark and unsuspected influence, capable of modifying opinions and conduct, and of interfering with rational judgment. It is not difficult to see from such an example that the unrecognized presence of powerful complexes below the threshold of consciousness tends to mental and moral inefficiency. In some cases, it ends in grave mental disorder.

It is by the detailed study of such psycho-neuroses that Freud has been able to elaborate a technique for bringing the suppressed desires back into consciousness. By the analysis of the patient's dreams, and by the method of free association, he has frequently been able to help the patient to discover what the repressed complex is, and thus to put him on the high road to recovery. It is probably true that Freud has exaggerated the rôle of sex. He has practically assumed that it is the repression of this one impulse that accounts for the conditions of all the neurotic patients whom he has treated. But later workers, using similar methods, have shown that the repression of other powerful impulses tends to mental disorder.

Adler has tried to show that the distorted working of the two great instincts of self-assertion and self-abasement are the sources of all neuroses. Dr. Boris Sidis, on the

other hand, regards fear as the great cause of disorder, and his view has received some support from investigations of shell-shock cases. For example, a soldier suffering from shell-shock has been known to believe that he is paralysed and cannot walk. By psycho-analysis it has been revealed that the symptom is due to an unconscious desire for a disability which, by removing him from the front-line, would bring relief from an intolerable strain. All his life he has been taught to despise cowards and to suppress primitive manifestations of fear, and in the Army he is surrounded by a public opinion which ranks devotion to duty higher than self-preservation. There are, then, within him two opposing sets of tendencies, the one urging him to forget himself in his devotion to duty, and the other—the more primitive—tending to self-preservation. He is not strong enough to face the issue and win his way to a real solution; and so in order to avoid the full force of the conflict, he consistently represses the manifestations of fear, in accordance with public opinion, and refuses to recognize its existence. But the primitive forces of self-preservation do not on that account cease to exist. They are driven to find indirect expression in the delusion that he is paralysed.

The truth seems to be that the repression of any innate impulse which is sufficiently powerful may be the source of mental and moral inefficiency. Is there then no place for discipline of the appetites and instincts? Must the adult exercise no control over the child's activities? To assume such a position is to misunderstand the contribution of Freudian psychology. In every individual there will be conflicts between primitive life-impulses and those higher ideals, which are partly, though not entirely, due to the

traditions of the society to which he belongs. No one has shown more clearly than Trotter¹ how great is the repressive influence of herd opinion, and how inevitable are conflicts to every child born into a civilized society. Consequently, there must be discipline; but the discipline must be of such a nature as to lead the child to face and solve his conflicts. It must not be merely negative. A continual "Thou shalt not" is certain to lead to disaster in one of two directions. If the individual is sufficiently vigorous, it will lead to an explosion in which the pent-up forces break through the artificial barriers and express themselves, it may be, in illegitimate ways. On the other hand, repression may lead to mental disturbance, which is no less real because it finds less obvious and less dramatic forms of expression. An unsolved conflict is a point of weakness in the mind. Actual disaster may not come, or may come only in adult life when the individual suffers some unusual strain; but there will inevitably result some degree of mental and moral instability and inefficiency.

THE MANY-SIDEDNESS OF DEVELOPMENT

It is important at the outset that the many-sided nature of the individual's growth should be recognized. From the beginning, the human individual is a body-mind, whose physical and mental growth is so inter-related that the separate consideration of either is only justified as a necessary preliminary to a more adequate interpretation. Even the innate impulses, the appetites and instincts, have this double aspect. They are *psycho-physical* dispositions.

Similarly, the distinction drawn for convenience between

¹ W. Trotter, *The Instincts of the Herd in Peace and War*, 1916.

the cognitive, emotional, and conative aspects of experience must not be interpreted to mean that development along one line proceeds separately from that along another. Mere knowledge is an abstraction : it is always accompanied with accessories of emotion and purpose. Pure emotion is an abstraction : it is always directed toward some object, which is known, and tends to issue in some form of behaviour. Even in the functioning of a primitive instinct the three chief aspects of experience usually distinguished are involved. There is an inherited tendency to *perceive* a certain object, to *feel* a specific emotion on perceiving it, and to *behave* in a certain way in respect of it, or at least to experience an urge towards such action. For example, in flight, the child hears the thunder, is frightened, and cries or hurries to some adult for protection ; in pugnacity, he notices someone who annoys him, and hits out vigorously ; in affection, he sees someone who pleases him, and smiles in response.

If the innate bases from which growth proceeds have different aspects, even more complicated and many-sided is the individual at later stages. He is a body-mind, a social individual, with cognitive, emotional, and conative experiences all interwoven. The theory of separate faculties (such as memory, imagination, judgment, and reasoning) is now much discredited, for it is realized that the individual normally functions as a unity. But he has these and other powers, and by their functioning he acquires knowledge, taste, and skill of various kinds. He develops moral habits, sentiments, and ideals. Perhaps eventually he has a theology, the experience of mystical union with his God, and an effective ethical code. He *is* more than all these. They are, as it were, the rainbow colours that

result from the separation of the white light of his living personality by its passage through the prism of psychological analysis.

“ But all, the world’s coarse thumb
 And finger failed to plumb,
 So passed in making up the main account ;
 All instincts immature,
 All purposes unsure,
 That weighed not as his work, yet swelled the man’s amount :
 Thoughts hardly to be packed
 Into a narrow act,
 Fancies that broke through language and escaped :
 All I could never be,
 All men ignored in me,
 This, I was worth to God, whose wheel the pitcher shaped.”¹

¹ R. Browning, *Rabbi Ben Ezra*.

CHAPTER VI

THE RHYTHM AND CONTINUITY OF DEVELOPMENT

THE unfolding of a human individual is essentially a continuity. In these days of educational reorganization, when the ages 7 + and 11 + are being used in some quarters as though they were magic formulæ for solving intricate educational problems, it is well to remind ourselves that the intellectual, emotional, and social growth of each individual, like his physical development, is both unique and continuous. This is the great truth concerning individual development which has usually been emphasized by novelists and dramatists.

There appears, however, to be a natural periodicity, a common rhythm in the unfolding of the life-histories of individuals, widely separated by inheritance, circumstances, and experience—at least of individuals brought up under the conditions of a modern civilized society. The phrase “stages of development” has sometimes been used to describe this periodicity, but it is liable to be misinterpreted to imply that there are fixed points at which the movement of development stops, to begin again in another direction. In reality, the living individual never stops, but continues to unfold until death. He “endures by changing.”

“ At first the infant,
Mewling and puking in the nurse’s arms,
And then the whining school-boy, with his satchel

And shining morning face, creeping like snail
 Unwillingly to school. And then the lover,
 Sighing like furnace, with a woful ballad
 Made to his mistress' eyebrow. Then a soldier,
 Full of strange oaths, and bearded like the pard,
 Jealous in honour, sudden and quick in quarrel
 Seeking the bubble reputation
 Even in the cannon's mouth. And then the justice,
 In fair round belly with good capon lined,
 With eyes severe, and beard of formal cut,
 Full of wise saws and modern instances ;
 And so he plays his part. The sixth age shifts
 Into the lean and slippered pantaloon,
 With spectacles on nose, and pouch on side ;
 His youthful hose, well saved, a world too wide
 For his shrunk shank ; and his big manly voice,
 Turning again toward childish treble, pipes
 And whistles in his sound. Last scene of all,
 That ends this strange eventful history
 Is second childishness, and mere oblivion,—
 Sans teeth, sans eyes, sans taste, sans everything."

Modern science has enabled us to define more exactly the chief articulations of individual development and to appreciate the chief distinguishing characteristics of each successive period.

PHYSICAL GROWTH

There is general agreement that in the pre-natal period, and especially in the month before birth, growth is exceedingly rapid. There have been many statistical enquiries concerning the increases in height and weight which accrue after birth. In this country, there was an enquiry conducted by the British Association for the Advancement of Science which covered more than 42,000 children drawn from all social classes, and concerning which a report was issued in 1883. The average heights and weights of boys and girls for each year until the

age of 21 were measured and the annual increments calculated. Certain general conclusions were drawn, the most important of which were, firstly, that growth is more rapid during the first five years of life than at later stages; secondly, that boys and girls differ in regard to the rate of growth, boys growing slightly more rapidly than girls from 5 to 10, and girls more rapidly than boys from 10 to 15, when boys again take the lead. In 1913, Greenwood¹ published the results of a similar enquiry in England and Wales concerning 800,000 elementary school children; naturally since the data were obtained from elementary schools they were more restricted in regard to range of ages and social classes. From such investigations in this and other countries, growth-curves have been deduced which show clearly the generalizations which can be drawn concerning the average rate of physical growth at different periods of development.

Thus, by marking off from a growth-curve the periods necessary for each 10 per cent. addition to weight, Minot has shown that "the older we are, the longer it takes to grow a definite *proportional* amount."²

Professor H. A. Harris, using the growth-curve for height and weight after Stratz,³ shows that there are three "springing-up" periods, alternating with three "filling-out" periods, before maturity is reached. There is first a period of very rapid growth during the first year of life. This is followed by a period of slower growth, extending from 1 to 5 years. Then from 5 to 7, there is a second springing-up period; followed by a period characterized

¹ A. Greenwood, *The Health and Physique of School Children*, 1913.

² Minot, *Age, Growth, and Death*.

³ *The Primary School*, Appendix II, H.M.S.O., 1931, p. 225.

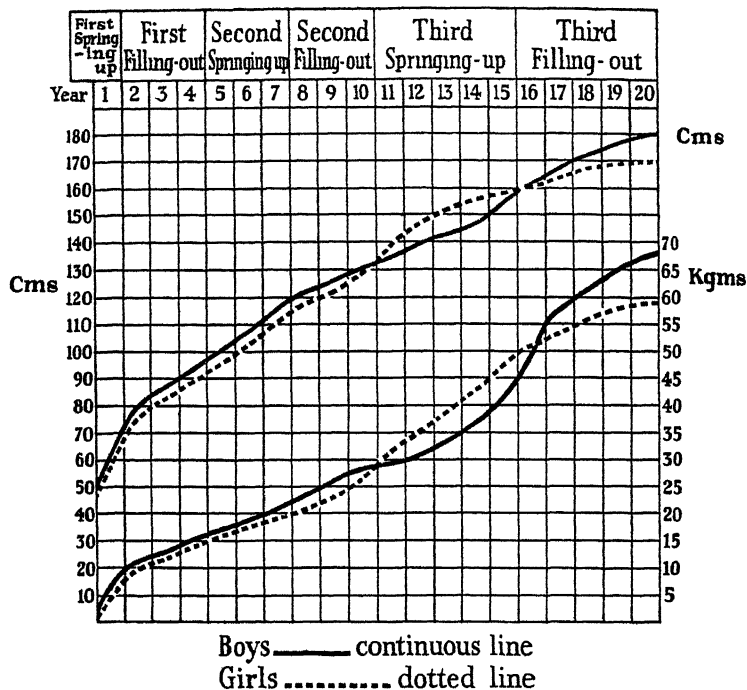


DIAGRAM I. THE GROWTH-CURVE

for height (cms) and weight (kgms) to show the three "springing-up" periods followed by three "filling-out" periods (after Stratz).¹

by slow steady growth between 7 and 11 or 12, but varying slightly according to sex. Then comes a third period of accelerated growth associated with puberty, followed in turn by a period of consolidation.

One of the University of Iowa studies, namely, that of B. T. Baldwin on "The Physical Growth of Children from Birth to Maturity," deserves consideration, not only on

¹ Reproduced from *Report on the Primary School*, Appendix II, with the permission of Professor H. A. Harris and the Sanction of the Controller of H.M. Stationery Office.

account of the large range of age-groups considered, but also because other measurements indicative of growth, as well as height and weight, were taken in most cases. These included chest-girth, breathing capacity, and the strength of various parts of the body. Indices, such as weight-height, cephalic- and vital-height, are also recorded.

It will be seen from Table I, after B. T. Baldwin, that the acceleration in the rate of growth characteristic of the period 12 to 17 (boys) shows itself not only in the increments to weight and height, but also in the other measure-

TABLE I
AVERAGE INCREMENTS OF GROWTH (FOR ONE-YEAR PERIODS FROM
7 TO 17) (after B. T. Baldwin)

		7-8 yrs.	8-9 yrs.	9-10 yrs.	10-11 yrs.	11-12 yrs.	12-13 yrs.	13-14 yrs.	14-15 yrs.	15-16 yrs.	16-17 yrs.
A. Height (in centimetres)	Boys	4.14	5.02	4.75	4.80	4.54	6.15	6.03	6.15	6.10	3.63
	Girls	4.12	4.97	6.35	5.09	5.01	6.14	4.29	3.70	1.84	.20
B. Weight (in kilograms)	Boys	1.81	2.81	2.41	2.72	2.89	4.54	4.45	5.36	5.10	4.17
	Girls	1.65	3.34	3.66	2.95	3.61	5.71	4.42	5.30	1.98	.32
C. Breathing Capacity (in decilitres)	Boys	1.63	1.74	1.58	1.93	1.96	2.68	3.32	4.30	4.73	3.72
	Girls	1.00	1.91	1.83	1.82	2.25	2.83	2.11	2.74	1.48	.48
D. Sitting Height (in centimetres)	Boys	1.73	1.81	1.63	1.83	1.81	2.51	2.60	3.12	3.95	1.54
	Girls	1.46	2.60	2.49	2.30	2.04	3.25	2.58	2.42	1.46	.06
E. Chest Girth (in centimetres)	Boys	1.54	2.28	2.06	1.63	1.96	3.44	2.56	3.99	3.90	3.59
	Girls	1.69	3.16	2.41	2.44	2.32	4.33	2.94	3.55	.98	.14
F. Strength Right Arm (in kilograms)	Boys	2.21	2.93	2.04	2.02	1.99	3.95	2.60	4.69	6.66	3.60
	Girls	2.01	2.69	2.54	1.53	2.01	3.23	2.89	2.26	1.90	—11
G. Strength Left Arm (in kilograms)	Boys	2.05	2.36	2.02	1.74	1.46	3.13	3.61	3.79	5.75	2.10
	Girls	1.80	2.75	2.59	1.88	1.79	2.55	2.50	2.32	1.70	—07
H. Strength Upper Back (in kilograms)	Boys	1.56	2.33	1.89	2.06	2.08	3.62	2.85	3.79	4.89	4.15
	Girls	1.22	1.55	2.16	1.50	1.74	2.24	2.27	1.96	1.17	.00

ments taken, such as, for example, breathing capacity or strength of the upper back.

Baldwin does not neglect the differences which exist in regard to the rhythm of development between boys and girls, and between tall and short children; and the data which he has collected seem to justify the general conclusion that there is a marked increase in the rate of growth during the years, beginning at 12 for boys above the median, and at $10\frac{1}{2}$ for girls above the median, and ending at about $15\frac{1}{2}$ in the case of the boys, and 13 in the case of the girls. The acceleration is somewhat later in beginning and ending for boys and girls below the median, as compared with the same sex above the median.

Physical development may be considered from the standpoint of anatomical and physiological changes as well as in relation to the total size of body. The first or milk teeth last only until about the age of 7, and the appearance of the wisdom teeth is usually delayed until the age of 21 or even later. The pubertal changes occur in different individuals over a wide range of ages, but it is significant that there is a positive correlation between physiological maturation and anatomical age, as evidenced by height, weight, and, say, the development of the area of the carpal bones. The median age of first menstruation for girls was found by Baldwin to be between 13 and 14 years; but before this there is a period of preparation indicated by the rapid growth of the genital organs, extending over about two years. Generally, girls tend to mature at an earlier age than boys, and tall girls (and boys) earlier than short.

The rate of the growth of the brain is also significant. In the early months, the unknit skull allows of rapid

expansion of the brain; and by the end of the first nine months, about one-third of the total increase in weight which may be expected is added. By $2\frac{1}{2}$ years, the second one-third accrues; and by about 7, the brain is almost complete in weight.

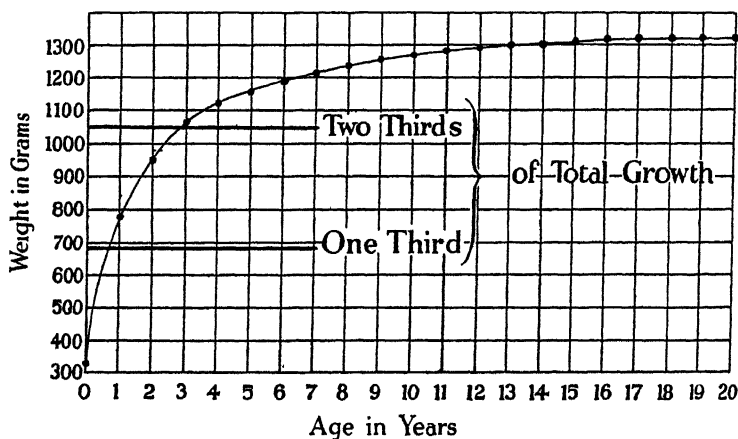


DIAGRAM 2. THE GROWTH OF THE BRAIN¹ (after Buhler).

The body continues to grow long after this period and thus the brain is relatively larger in proportion to the body at about the age of 7 than at any other stage in the life-history of the individual. In more scientific terms, the index of cerebral value reaches a maximum round about the seventh year.

The phases of development which are usually distinguished in the life-histories of human individuals are infancy, childhood, youth, maturity, and old age. The chief factors of physical growth, which have been reviewed,

¹ Reproduced by permission from Professor K. Koffka's *The Growth of the Mind* (Kegan Paul, Trench, Trubner & Co., Ltd.).

would suggest that Infancy should be regarded as extending from birth to 5, Childhood from 5 to 12, and Youth from 12 to 21 or even later. Each period thus defined would consist of a sub-period of rapid development followed by a sub-period of consolidation. The general slowing down of growth as maturity is approached, noted by Minot, would be indicated by the increasing length of the successive periods, Infancy extending over five, Childhood over seven, and Youth over nine years.

MENTAL DEVELOPMENT

Do the main facts of mental development fit in with such a general scheme? It is interesting to notice that scientific observers, who have made detailed investigations of the early years of life, are agreed that it is a period of rapid learning. For example, Gesell, who has devised and used a schedule of diagnostic norms to compare the development of individuals, concludes that "the proportion of development attained during the first sexennium of life is treble that attained in the two succeeding sexennia."¹

Fröbel and Montessori have noted the marked development in mental activity in the sixth and seventh years (the second springing-up period), when the brain is relatively large as compared with the body. Piaget's² investigations concerning the thinking of children have led him to the view that up to 7 or 8 the individual is egocentric, and his or her thinking is essentially different from that of the civilized adult. Mrs. Isaacs has criticized this view, and also the

¹ A. Gesell, *The Mental Growth of the Pre-School Child*, 1925.

² J. Piaget, *Language and Thought in the Child*, 1926; *Judgment and Reasoning in the Child*, 1928; *The Child's Conception of the World*, 1929; *The Child's Conception of Causality*, 1930.

clinical methods of study adopted by Piaget to obtain his data. She has rightly emphasized the continuity of intellectual and social development. Similar criticisms have been put forward by Dr. Anderson and his research workers in the University of Minnesota as a result of their very careful studies of the social development of young children. But there is some significance in the fact that Piaget fixed the turning-point at about 7 years of age.

Since Dr. Stanley Hall's monumental work on *Adolescence*,¹ evidence has accumulated which largely substantiates his general point of view that rapid intellectual and emotional developments are associated with the onset of puberty. Dr. Leta Stetter Hollingworth² defines the period of adolescence as being between the twelfth and twentieth birthdays, though she is careful to point out that there are many individual variations from this typical range.

The widespread use of mental tests has now resulted in the general acceptance among psychologists of the view that general intelligence reaches a maximum in the normal child at about 16, 17, or 18 years. According to Ballard, up to that age the curve of development is "smooth and continuous. There is no break anywhere; no plateau, no steep ascent, no sudden change of direction." The "growth of ability" curve arrived at by Richardson and Stokes³ from their investigation of all Blackburn children, between 6 and 14, illustrates the continuity of development and the practical cessation of growth of ability at 16, 17, or 18 years.

¹ G. S. Hall, *Adolescence*, 1904.

² L. S. Hollingworth, *The Psychology of the Adolescent*, 1929.

³ C. A. Richardson and C. W. Stokes, "The Growth and Variability of Intelligence," *British Journal of Psychology*, Monograph, 1933.

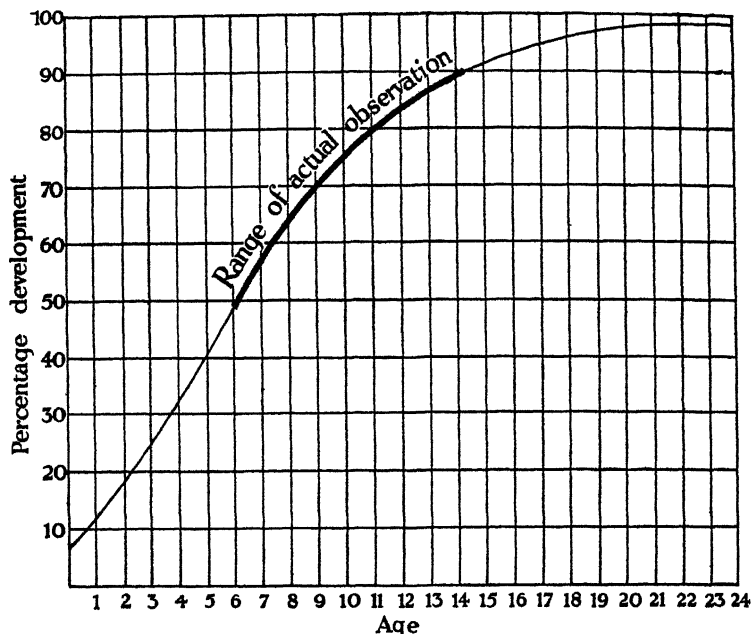


DIAGRAM 3. MEAN PERCENTAGE GROWTH-CURVE OF ABILITY¹
(after C. A. Richardson and C. W. Stokes).

The use of such a questionnaire as that described in *Youth*² has revealed that there is usually an intensification of the emotional life, as well as a development of intellectual interests, during the period. On this account the period of adolescence is probably best defined as extending, on an

¹ Reproduced by permission of Messrs. C. A. Richardson and C. W. Stokes, and the Editor of *The British Journal of Psychology*.

² O. A. Wheeler, *Youth*, 2nd Edition, 1933, Questionnaire, pp. 35-6.

ADOLESCENCE

Note.—Adolescence can be interpreted to mean the period from about 11 or 12 to about 20 or 21 years of age.

A. Particulars to be filled in below :

Name or Initials

Age..... Sex.....

average, from about 11 or 12 to about 21 years, the division into the two sub-periods being at about 16 or 17 years.

The scheme of classification thus indicated, namely, Infancy from birth to 5, Childhood from 5 to 11 or 12, and Adolescence from 11 or 12 to 21 is, however, not that blessed "for convenience" by Professor Cyril Burt. His alternative of three phases, each subdivided into two parts, namely, Infancy 0 to 7, Childhood 7 to 14, and Adolescence 14 to 21,¹ is admittedly artificial, depending rather on the

Note—*continued*

Home conditions during Adolescence (i.e. whether parents were living, number of brothers and sisters, etc.)
 Secondary School (Girls', Boys', or Mixed) (with rough dates)

 Post-School Occupation (with rough dates)

B. Questions (to be answered on examination paper and attached):

1. Indicate any developments in intellectual interests which occurred *during adolescence*. For example, what were your favourite occupations and your favourite subjects of study? Account as far as possible for your preference.
2. Do you remember having systematic daydreams (a) during childhood, and (b) during adolescence? If so, of what kind? Do they still continue?
3. Can you remember any differences in your appreciation of nature, music, art, and poetry *during childhood and adolescence*?
4. Describe briefly the kind of religious training that you received *during childhood and adolescence*.
5. What kind of religious experiences (if any) did you have (a) during childhood and (b) during adolescence?
6. Did you experience "conversion"? If so, when? What form did it take?
7. Did you experience doubts (a) before and (b) after conversion? If so, of what kind?
8. Were you interested in the opposite sex during adolescence? In particular, did you fall in love (a) with anyone much older than yourself, and (b) with someone of your own age? If so, when?
9. Did you make life-long friends at this period?
10. Did you hero-worship someone of your own sex?
11. Were you curious concerning the facts of life (a) during childhood, and (b) during adolescence? Was your curiosity satisfied? If so, from what source?

¹ *The Primary School*, Appendix III, H.M.S.O., 1931, p. 255.

external changes in the child's life (such as promotion from the infants' school and age of leaving the elementary school) than on internal developments. It is true that the second springing-up period (5 to 7) is less well-marked in the weight growth-curve than in the height, and that there is therefore some justification for merging the subdivisions into one period extending from birth to 7, throughout the whole of which both physical and mental growth appear to be rapid. But there does not appear to be any adequate reason for transferring the years 11 to 14 from adolescence to childhood. The physical and mental changes characteristic of adolescence are fairly evident in the majority of girls at about 11 and in boys a little later. For example, Hughes¹ found that among more than a thousand boys replying to questions on sex, the *average* age of the beginning of sex-consciousness was reported to be 12½ years. The limits of infancy and childhood which seem to reflect most adequately the chief facts of physical and mental development are those adopted by Dr. Ernest Jones, who regards Infancy as extending to 5, Childhood as covering the years 5 to 12, and Adolescence as beginning at 12 years. "The present law and custom of regarding the period from 5 or 6 to 14 as an educational unit," he says, "is not at all in accord with the conclusions of clinical psychology which suggest that the period from 5 or 6 to 12 is not comparable with that from 12 to 18, and cannot profitably be dealt with on the same educational lines."² With these limits, each period has a certain rhythm within itself, rapid growth and instability being succeeded by

¹ W. Hughes, "Sex Experiences of Boyhood," *Journal of Social Hygiene*, 1926, pp. 262-7.

² E. Jones, "Some Problems of Adolescence," *British Journal of Psychology*, XIII, p. 45.

slower growth and consolidation before the next rapid advance is made. The periods distinguished are nevertheless phases in a continuity which is never broken; and although they tend to follow a certain pattern, there are individual variations in regard to age, rate, and quality of development.

Then comes maturity, represented by the long plateau of the growth-curve, before the decline of old age. It is extremely difficult to define maturity, because growth seems to cease in respect to different aspects of the organism at different times. Thus, on an average, growth of the body practically ceases at about 21, if we except the "filling-out" of middle age, which is not usually regarded as growth. Sexual maturity is reached in middle or late adolescence; and the development of general intelligence is supposed to cease at about the same time. But has the growth of experience, the accumulation of knowledge, or the broadening of interests, characteristic of a later period, no developmental significance? Long after the growth of the body ceases, there appears to be an increase of creativeness, which in some cases shows itself in literary, artistic, scientific, or philosophical work, and which is either due to a greater power of sustained mental effort or to a development of the power to perceive relations and especially to perceive relations between relations. When is the individual emotionally mature and what exactly is meant by emotional maturity? What adjustments should have been made and what degree of stability reached before the individual can be regarded as mature? The truth is that we need many more scientific investigations of ordinary, as well as exceptional, people in middle and later life before we can appreciate fully the continuity of develop-

ment. Meanwhile, maturity may be usefully defined as being consequent upon the major adjustments characteristic of adolescence and as having as its chief quality *wisdom*, the fruit of a balanced many-sided development.

The living individual continues to unfold to the very end of his days. Even when youth is passed, there may be a new goal and a consequent change of inward direction. There can then be no fixed or final judgment of him by his fellows. "God Himself, Sir," said Dr. Johnson, "does not propose to judge man until the end of his days."

CHAPTER VII

INFANCY

THE period of infancy, which will be regarded as extending from birth to about 5 years of age, is characterized by quick and many-sided developments. Not only is physical growth rapid, but it seems as though priority confers upon infancy a generally dominating influence. "The basic lines of both physical and mental organization are laid down in these years," says Gesell.¹ This also is the view of Sir George Newman. "The age under 5," he says, "is the susceptible age for body and mind. It is the crucial age, psychologically as well as physically."² The work of psycho-analysts, which has thrown so much light on the causes of the disharmonies and maladjustments which show themselves in later life, has also led them to an almost exaggerated conclusion in the same direction. Thus Adler: "Early childhood almost settles the life plan." And Freud: "The little human being is frequently a finished product in his fourth or fifth year."

PHYSICAL GROWTH

In the space of one year, a healthy baby increases to about three times its original weight at birth. It may weigh about 7 lb. at birth, and notwithstanding the fact that it may lose weight at first through the shock of birth,

¹ A. Gesell, *The Mental Growth of the Pre-School Child*, 1925.

² *Report on the Health of the School Child*, H.M.S.O., 1928.

by the end of twelve months it will probably tip the scales at 21 or 22 lb. There is no other year in the life-history of the individual which can compare with the first in regard to rapidity of growth. The weight of the brain also increases in the first eighteen months more than in any other equal interval of time; and throughout the period of infancy there is very rapid development of the whole nervous system and of the sense-organs.

As might be expected from these facts, and from the need for rapid adjustment at birth to very changed environmental conditions, the period is also often critical to the health and full bodily development of the individual. According to the calculations of Gesell there are in America ten times as many deaths during the five years before school as in the ten years of school life; and one-third of all the deaths in the population occur in the group below 6 years.

Sir George Newman, who has had unique opportunities for collating the evidence collected by Medical Officers of Health in this country, is convinced that there is at present a fatal gap in the Public Health Services between the Infant Welfare Centre and routine School Medical Inspections. It is estimated that, although from 80 to 90 per cent. of babies are born healthy, 35 per cent. of the children admitted to school at the age of 5 suffer from such ailments and physical defects as to need medical treatment. The chief kinds of ailments revealed by School Medical Inspections are those dependent upon *faulty nutrition*, leading to some degree of malnutrition, lack of vigour, impairment of size and weight, anæmia and pallor, skin affections, external eye-disease, and rickets; secondly, ailments dependent upon *infective processes*, such as ear disease follow-

ing measles, or scarlet fever, tuberculosis, rheumatism, and dental disease. A third group consists of forms of skin disease dependent upon *unhealthy domestic surroundings*. A combination of these three conditions may result in the characteristic catarrhal, glandular, and alimentary conditions of children, including enlarged tonsils and adenoidal growths, and bronchial or digestive disturbance. Lastly, to this catalogue of the commoner ailments and defects must be added a large and indefinite group of nervous conditions, affecting the sense-organs or even the whole nervous system of the child, due to the *stresses and strains of life*.

“The medical facts in regard to these diseases and defects among children on admission to school make it clear,” says Sir George Newman, “that they represent in large measure failure wisely to provide nurture for the early years of infancy. I say ‘wisely’ because much of this failure to reach sound health is not due to neglect or want of effort. It may be due rather to over-anxiety for the welfare of the child, showing itself in overfeeding, over-clothing, and overcoddling generally. In either case it is want of knowledge in the grand art of child nurture.”¹

Side by side with this negative evidence concerning disasters during the pre-school period, there is also accumulating positive proof of the curative effects of the right kind of environment during these formative years. For example, the work of Dr. Mumford at the Greengate Open Air Residential School and Hospital, in the midst of slum surroundings in Manchester, one of the earliest open-air schools for city children in England, revealed the tremendous possibilities of early treatment of rickets and

¹ *The Health of the School Child*, H.M.S.O., 1925, p. 30.

debility by the provision of good food and sunlight and open-air conditions in which the children might play freely. Similarly, the description of cases of recovery from malnutrition, skin affections, and other ailments, in the Rachel McMillan Nursery School at Deptford, cannot fail to show the re-creative effects of appropriate conditions during these years of rapid growth. Many children admitted at 2, 3, or even 4 years of age in wasted, diseased, and forlorn conditions, were set on the high road to health before the end of the Nursery School period. Similar records are to be found in the annals of many well-run Nursery Schools where young children are allowed to develop among suitable and healthy surroundings under adequate medical and educational supervision.¹

Dr. Morrison, of Derby, has recently collected data to ascertain the difference in the physical condition of 100 children between 5 and 6 years of age, who had previously attended the Wright Street Nursery School, and 100 children from the same district who had gone direct to the Elementary School. The period spent in the Nursery School varied from nine months to two years and three months. His comparison shows that the nursery scholars averaged 48 inch taller and 2.04 lb. heavier than the others. Malnutrition was 2 per cent. among the Nursery School children compared with 15 per cent. in the Infants' department. The dental figures were favourable to the Nursery School children in every way, showing 35 per cent. as opposed to 24 per cent. with no carious teeth and a lower proportion with widespread caries (7 per cent. as against 15 per cent.).² The importance of providing a favourable

¹ For examples, see *The Health of the School Child*, H.M.S.O., 1925, pp. 35-6.

² *The Health of the School Child*, H.M.S.O., 1932.

environment for "normal" children in these early years is surely obvious from this and similar investigations.

MENTAL DEVELOPMENT

Within recent years much new light has been thrown on the nature of infancy by researches involving direct observation of, and experiment on, the behaviour of young children. From the publication in 1882 of Preyer's book entitled *The Mind of the Child*, which may be regarded as the foundation of modern child-psychology, there have followed in quick succession a number of descriptive records of individual development, like those of Miss Shinn, Sully, and Compayré; and of experimental researches by psychologists on their own children, such as those of J. M. Baldwin, Stern, and Valentine. There have also been important developments of method, such as the use of objective standards for the comparison of the behaviour of children. For example, Watson has collected motion-study films of infants in his psychological laboratory attached to a lying-in hospital in America; and Gesell has also developed a definite technique in the use of films for the study of behaviour. The pioneer work of Binet, the French psychologist, who first attempted to measure the intelligence of children by the use of standardized tests, has already had, and will have, far-reaching effects on the theory and practice of education. More recently, Gesell, and, following him, Bridges, as well as Anderson and Stutsman, have shown the possibilities of the use of "norms of development" for the comparison of different aspects of the behaviour of young children.

There have also been many practical experiments in the nurture of children, both in nurseries and Nursery Schools

and in Kindergartens and Infant Schools. The views of Froebel and the methods of Montessori have been tried out and in some cases modified ; and in general, through the experiments of Infant School teachers and of other supervisors, much light has now been thrown on the nature of development during infancy.

THE APPETITES AND INSTINCTS

Psychologists are generally agreed that mental health in the first two or three years is bound up primarily with the proper functioning of the appetites—hunger, thirst, elimination, sleep, and exercise. It is important for the child's future that wholesome controls and habits should be developed in connexion with these primitive impulses. It is a fundamental mistake to regard them as merely physical, for emotional situations arise out of them which need to be carefully handled if difficulties are to be avoided. For example, excessive destructiveness in later childhood has in some cases been traced back to emotional complications arising out of the process of weaning, improperly accomplished. The appetites also largely direct the powers of attention, and consequently of learning, during the first period of life. The efficacy of A B C biscuits in helping past generations of children to learn the alphabet is an illustration of a sound psychological principle, namely, that infants are naturally interested in anything that is intimately associated with the satisfaction of a primitive appetite, and that from such a centre, wider circles of interest can easily be drawn.

Some observers of young children would agree with McDougall that there are other inherited tendencies, such as flight, self-assertion, pugnacity, and the parental instinct,

associated with the specific emotions of fear, positive self-feeling, anger, and the tender emotion respectively; and innate tendencies of a more general nature, such as imitation, acquisition, constructiveness, and play—which are powerful in directing the learning processes in these early years. Watson,¹ on the other hand, affirms that “there are no instincts,” but that all the so-called instinctive forms of behaviour are “built in” by the parent and by the environment. In regard to one of these—fear—Valentine² has made detailed studies of his own children and of the occasions on which they exhibited fears of different kinds. His records led him to the view that a fear may need a certain degree of maturity for its first appearance and yet be *innate*, that is, not conditioned by past experience or “built in” by the parent or the environment. The balance of evidence seems to point to the general conclusion that there are inherited psycho-physical dispositions (McDougall’s “instincts”), but that it is a difficult problem to decide exactly when each first appears. The patterning of experience resulting from these innate tendencies is, however, clearly evident during the period of infancy; and McDougall’s theory and his list of instincts are therefore still of use for the understanding of individual development, especially in late infancy and early childhood, when life is lived more, though not entirely, on an instinctive level.

LEARNING

Infancy is a period of very rapid learning. Not only as a result of the individual’s own intelligence, but also

¹ J. B. Watson, *Psychological Care of Infant and Child*, 1928, p. 23.

² C. W. Valentine, “The Innate Bases of Fear,” *Journal of Genetic Psychology*, 1930.

through the influence of the society to which he belongs, controls of the appetites and instincts soon develop and modifications occur on the cognitive, feeling, and conational sides of experience.

SENSE-EXPERIENCE

The infant gradually learns to use his senses of sight, hearing, touch, taste, smell, and temperature. Driven by his appetites and by those instincts that have come into play, he selects for special attention some of the many competing external stimuli; and he thus gradually gains a knowledge of the most interesting objects and persons in the world around him. He experiences also organic and kinæsthetic sensations, such as pain and the stresses and strains of movement; and consequently, by active exploration, he soon discovers where his own body begins and ends. He *sees* his body as continuous with his bed; but if he pinches himself he has a very different experience (of touch and pain) from that (of touch) which he obtains when he pinches his bed. Gradually, by the use of his senses with increasing discrimination, he masters the immediate environment which surrounds him.

MOTOR ADAPTATIONS

At the same time, by repetition, he perfects certain early movements and obtains progressive postural control of his lips, head, back, and legs. He learns to co-ordinate sensory and motor experiences, and thus to adapt himself more exactly to his environment. Even in the first year, he acquires simple skills, such as grasping, sitting, and standing, and the making of various sounds. A little later he has learned to walk, and he is soon running, hopping,

and skipping. He learns also to lift and handle certain objects—his spoon, pencils and crayons, and other toys; and is willing and eager to help to carry things of a suitable size and to put them in their proper places. According to Gesell's observations, most children develop from scribbling with a pencil at 12 months to representative drawing of a man without a copy at 4 or 5 years.

LANGUAGE

The infant is also busy acquiring a knowledge of his native language (or languages) and the rate at which he learns, without effort, is little short of a miracle. By about 2½ years, an ordinary child usually has a good working knowledge of his native language—a remarkable achievement in comparison with the average adult's attempts to learn a foreign language. According to Stern, who has made detailed investigations of the order of speech-development, children (girls) at 2 have a speaking vocabulary of about 300 words and a considerable development of sentences; the following year sees the appearance of subordinate sentences and is characterized by the making of new words; and we may look upon the child's speech-development as *mainly* finished from the fourth to the fifth year.¹ Probably the children investigated by Stern were of more than average intelligence and were favoured by a cultured environment. Smith found by the application of a specially constructed vocabulary test to a reasonably large number of cases that the average size of the vocabularies of children of two years of age was 272; but there was very rapid development between 2 and 3 years.²

¹ W. Stern, *Psychology of Early Childhood*, 1924, Chap. X.

² *University of Iowa Studies in Child Welfare*, Vol. III, No. 5.

JUDGMENT AND REASONING

The first five years of life have been regarded by some authorities as being pre-eminently a period for sense-training and for adaptation to the physical world. The Montessori method, for example, is based on this general view. The didactic apparatus provided is designed to train the various senses by giving the child successive exercises in discrimination. For example, he learns to distinguish shades of the same colour by arranging them in a series ; he learns to distinguish shapes by placing insets in their appropriate holes ; or he learns to discriminate in regard to size by fitting cylinders into the places designed for them. In each case there is a training of judgment, as well as practice in manual dexterity and in the use of the actual sense-organs. Madame Montessori herself is clear about this. She defines the aim of her sense-exercises as follows : " Their aim is not that the child shall *know* colours, forms, and the different qualities of objects, but that he shall refine his senses through an exercise of attention, of comparison, and of judgment. These exercises are true intellectual gymnastics." ¹

Madame Montessori is, however, open to the criticism that her system does not provide opportunities for other cognitive processes which also arise in this period. The child is not expected to use the " staircase " number apparatus for " playing at trains," or for any other purpose than that for which it was designed. His business at this stage is to adjust himself to the real world, and he is therefore not told fairy stories or encouraged in his tendencies to fantasy. There is undoubtedly an element of

¹ M. Montessori, *The Montessori Method*, 1912, pp. 362-3.

truth in this view of the priority of sense-experience. "Our first teachers of philosophy," said Rousseau, "are our feet, our hands, and our eyes." Nothing can take the place of accurate adjustment to the real world. But it is also true that even before the age of 5 a normal child can recognize, remember, and imagine. He dreams even before the age of 2; and that probably means that elements derived from his sense-experiences are not only remembered but are thrown into new combinations. In play, he invents as well as imitates, perhaps dressing his animals up in imitation of human beings, but also making them hold imaginary conversations with one another. He gains his language largely by imitation, but he can also invent words by analogy and use words in different settings. "Whobody did it?" was a natural invention of an intelligent three-year-old.

Can young children reason? Are infants capable of solving problems, and if so, is the solving *by insight*? Köhler's¹ famous experiments on animal learning, in which chimpanzees were encouraged under test conditions to solve such problems as the getting out of enclosures or the use of a stick for obtaining a desired object, led him to the view that their learning was not merely chance discovery through repetition, but involved insight. Alpert² has carried out a similar study with children ranging from 19 to 49 months of age. Her results show that children of two may solve such problems *with insight*, that is, by perceiving relations.

There is ample evidence too that infants frequently pass through a period when they have a marked desire to

¹ W. Köhler, *The Mentality of Apes*, 1925.

² A. Alpert, "The Solving of Problem-Situations by Pre-School Children," *Teach. Coll. Contrib. Educ.*, 1928.

perceive and investigate causal relations. They constantly ask "Why?". "Why is the coal-box black?" asked a tiny boy of 3. When he received the reply "Perhaps the man who made it painted it black so that it would not show the dirt from the coal," "Why is the coal black?" was inevitably the next question. Such evidence cannot of course be interpreted to mean that young children can carry through an ordered enquiry or reason about things of which they have no knowledge, but it does suggest that even at this early stage they are capable of "perceiving relations," which process is regarded by many psychologists, and notably by Spearman, as essentially similar to more intricate reasoning processes.

EMOTIONAL DEVELOPMENTS

The developmental significance of infancy is nowhere so clearly seen as in the changes which occur in the feeling aspect of experience. So far-reaching are some of the early emotional experiences of the individual and so significant are the early organizations of the emotions, that it is no exaggeration to say that the foundations of character are laid during this first period of life. The evidence that has led many psychologists to adopt this view is two-fold. There is a vast accumulation of facts gathered from investigations of cases of mental and moral inefficiency in adult life, which throws considerable light on the problem as to what happens when things go wrong in emotional development. There is also a many-faceted body of evidence which can be used to give at least a partial answer to the question, "What happens when things go right?"

The work of psycho-analysts has indirectly thrown considerable light on the causes of distorted judgments,

delinquencies, and various character-defects. In a high proportion of cases the trouble can be shown to have originated in an early and unsolved emotional conflict. For example, in the well-known case of claustrophobia examined in such detail by Rivers,¹ the irrational objection to closed spaces, which even drove the patient when he was an officer on active service to escape from a dug-out into the firing-line, seemed to have originated in a terrifying experience which he had had in early childhood in a closed space. The repression of this early fear rather than its conquest had left a general fear of closed spaces, which was only overcome when the original experience was brought back to consciousness, and the origin of the claustrophobia was thus explained to the patient. When it is remembered that the tendency to feel fear in the presence of certain dangers appears to be innate,² and that the first few years of life are of all periods the most prolific of fears, the importance of right and sympathetic treatment is surely obvious. Yet there are some parents who add to the gallery of naturally feared objects (such as strange animals, big eyes and teeth, falling down and loud noises), others which the child himself would not have originated (such as policemen, Jack the Ripper, and the All-Seeing Eye). There are other over-anxious parents who do not lack sympathy but seem not to realize that their own fears are infectious, and that they could do more to aid the child in the conquest of his fears by their own calm and control than in any other way. It is the "reasonable" conquest of fears and not their repression, nor even their avoidance, that provides the key to mental health in childhood.

¹ W. H. R. Rivers, *Instinct and the Unconscious*, Appendix II, 1920.

² C. W. Valentine, "The Innate Bases of Fear," *Journal of Genetic Psychology*, 1930.

There are other emotions than fear which children naturally experience under varied conditions. The chief of these are anger, positive and negative self-feeling, disgust, wonder, and affection, together with the two feeling tones, pleasure and displeasure. In the very early years the emotional responses are largely undifferentiated and their expressions are crude. A little child of 2 is capable of feeling fear, and negative self-feeling, and wonder, separately ; but he does not appear to be capable of experiencing the compound emotion of awe which results apparently from the fusing of the three. Before the end of the period of infancy there is, however, development in the variety and delicacy of feelings, and there is a marked increase in the degree of control of the varied expressions of the emotions. It is clear that for healthy emotional development at this stage there should be a preponderance of satisfying experiences ; that is, of experiences accompanied by the feeling tone of pleasure.

Although the range of emotional responses is limited in this early period, a most important development of the emotional life is taking place in another direction. Groups of emotions are beginning to be associated around organizing ideas ; that is, sentiments, as distinguished from emotions, are beginning to be formed. For example, a little child learns to love his mother. This means something more than that he occasionally experiences the tender emotion when she is present to his senses. It means that he has a permanent disposition to feel a whole group of emotions under various circumstances. If he knows that his mother is in danger, he feels fear ; if she is suffering, he grieves ; if she is ill-treated, he is angry with those responsible ; and if she is honoured, he rejoices. A whole

group of emotions—fear, grief, anger, joy, and the tender emotion—are thus organized around the idea of his mother. Such an organization enables the individual to control momentary appetites and impulses. At first, when a child is not allowed by his mother to have some desired object, the emotion of anger which he experiences seeks immediate outlet in blows. But later, when the sentiment of love for his mother is less rudimentary, he is able to control the momentary impulse by means of the permanent organization.

The sentiments formed during infancy tend, of course, to be concrete. The kind of abstract sentiments which influence the conduct of some adults, such as hate of oppression, love of justice, of truth, of power, or of freedom, will not appear at this stage. The development of the cognitive side of experience is insufficient. But although the little child cannot yet hate oppression in the abstract, he can, and does, hate the bully. He may not love humanity in the abstract, but he soon begins to love individuals—his mother and father, himself, his teacher, and his little friends; and by means of such concrete sentiments he learns the first lesson in controlling his wayward emotions. He ceases to be the slave of every passing impulse, and some degree of consistency is thus gradually introduced into his character and conduct. "In the growth of character," says Shand, "the sentiments tend, with increasing success, to control the emotions and impulses; in the decline of character the emotions and impulses tend, with increasing power, to achieve their freedom."¹ The formation of concrete sentiments is thus the most fundamental development of character that takes place normally during infancy,

¹ A. F. Shand, *The Foundations of Character*, 1914, p. 62.

and it is consequently all-important that the right kind of sentiments should be formed.

The first sentiments to develop in a child are naturally directed towards his father and mother. No matter what further provision is made for the education of young children, it will still remain true that the first lessons in love or hate will be learned in the home circle. Indeed, as Flügel has shown in his *Psycho-Analytic Study of the Family*, the early emotional relationships established between a child and the members of his family largely determine his later emotional development, and possibly even his whole attitude to life. Suppose that both parents are unduly repressive and fail to understand his need for tenderness and encouragement, then obviously the child's difficulties in learning the elementary lessons of love are increased, for the parents are the very persons round whom this distinctive pattern of the emotions should naturally first arise. Or suppose, on the other hand, that the parents spoil the child, forgetting that he has to acquire self-respect and learn to love as well as be loved, then there is the possibility that he may become unduly dependent on them, and be prevented from developing that self-reliance which indicates that he has reached an important stage in the normal maturation process.

The risk of definitely pathological developments is greatest in individuals belonging to families in which there are unhappy relations between parents and in which they are also the only children. In their case there may be a very real need for attendance at a Nursery School in the early years in order that they may be saved some of the ill-effects of an unhealthy social environment.

The arrival of the new baby may also disturb the emo-

tional poise of the toddler if his parents are not careful and sympathetic in their handling of him during his adjustment to the radically changed condition of the family circle. Temper-tantrums and other means of recapturing his parents' attention are sometimes tried, leading perhaps to emotional instability. All this trouble could probably be avoided by careful and considerate treatment, ensuring that he does not feel left out in the cold.

Professor Katherine Bridges's¹ comparative study of the emotional and social development of a number of young children attending a Nursery School supplies interesting evidence of the growth of such foundational sentiments as self-regard and love of others. Following the methods of Gesell, she employed a social-development scale to discover what kind of behaviour towards other children and towards adults was characteristic of each age-group. Where there is great variety between individuals the generalizations can, of course, only be rough ; but there is indicated a kind of norm of social development. She affirms that two-year-olds show only a fleeting interest in other children and tend to play alone. By about 3, they want to play in pairs or in small groups of three or four ; by $3\frac{1}{2}$, they are usually willing to share possessions brought from home. A little later (about 4), they take care of smaller children, indeed, they tend to bother them unduly ; but by about 5 they are really considerate of the younger children.

There is a similar development also in the children's relations to adults. At 2 they usually cling to their parents and are shy with strangers ; but later, general friendliness with the teachers and helpers in the Nursery School

¹ K. M. B. Bridges, *The Social and Emotional Development of the Pre-School Child*, 1931.

develops. When they begin to discover their own powers, they tend to become assertive of their independence and they may become disobedient. Between the fourth and fifth year, they retain this self-reliance, but it is now coupled with a friendly willingness to co-operate with adults. They have attained to a measure of emotional stability.

GENERAL CONCLUSION

The overwhelming developmental significance of infancy cannot be denied in the face of the scientific facts which have been reviewed. The kind of training appropriate for the period is also obvious. The essentials are that there should be good air, good food, sufficient sleep, plenty of space for free movement, medical supervision and treatment (if necessary), and a training in hygienic habits. There should be opportunities, in the open air and under conditions of safety, for free play and varied activities, such as climbing, running, jumping, dancing, digging in sand or in a garden. There should be provision for the exploration of an appropriate environment (including a garden and, if possible, a farm), for varied kinds of play (both solitary and social), and for expression work in varied materials. The surroundings should not only give scope for curiosity and for the rudimentary powers of discovery and thought, but they should allow of the enjoyment of beauty of form and rhythm in its simplest forms, whether of Nature, art, music, or poetry. There should also be such social and humanistic influences round the young child that he has a fair chance of gaining a mastery of his native language, of learning to understand and be considerate of his fellows, and of so expanding in joy and affection

that his feelings become organized in a way likely to lead to emotional health. This is the foundational training which is needed in order that an individual may have a good chance of physical and mental health and of harmonious many-sided development in later life.

CHAPTER VIII

CHILDHOOD

PHYSICAL GROWTH

THE period of childhood has been defined as extending from about 5 to 11 or 12 years of age, and consists of a "springing-up" followed by a "filling-out" period. The years from 5 to 7 are usually characterized by rapid growth in height; but the weight-curve does not show so clearly acceleration in the rate of development. At this stage, many children lose the rounded plumpness of infancy and tend to become thin. This is particularly noticeable in regard to the face, which tends to lengthen, the distinctive features becoming more pronounced. The first teeth begin to fall out to make way for the second permanent teeth. The brain grows rapidly and is almost complete in weight by about the age of 7.

This sub-period of rapid change is succeeded by a period of slow and steady growth, extending from about 7 to 11 or 12 years of age.

As might be expected, during the sub-period of rapid growth there is often a certain delicacy, and especially a noticeable liability to infections, such as whooping-cough, measles, and chicken-pox. These illnesses frequently lead to loss of weight and accentuate the "thinning" process to which reference has already been made.

During the filling-out period, health is generally good, apart from a tendency in some cases to weakness of the

tonsils. There is a considerable increase in muscular strength and in accuracy of control of movements, so that a boy of 10 is likely to be more accurate in certain motor adjustments than he was at 7, or than he will be at 15.

MENTAL DEVELOPMENT

In the very early years of life the primitive appetites largely direct the infant's attention. By the beginning of the second period, most of the instincts distinguished by McDougall seem to have appeared; and they, with the appetites, now determine the directions of the individual's learning. The instinct of curiosity seems to be particularly powerful. The child wishes to see the works of the engine or the inside of the watch. He is urged to investigate the various commodities and devices used in the home—the electric-light switches, the curtain pulleys, and the locks of doors. He asks innumerable questions about plants and animals and natural processes. Irritated adults may call the child Peeping Tom or Meddlesome Matty, forgetting that curiosity is not only a natural, but a desirable, impulse, which serves to enable the individual to adjust himself more adequately to his environment. Similarly, at this stage and even earlier, he exhibits tendencies to imitate, collect, construct, and to experiment, which will impel him to attend to some things to the exclusion of others, and to learn by some methods in preference to others.

PLAY

Perhaps the most outstanding feature of the period of early childhood is its character of play. "Man has won in the race against animals with more fixed instincts," says

Professor Godfrey Thomson, "just because of his childhood period of play."¹ Whatever theory be adopted to explain this characteristic—whether the Surplus Energy Theory of Herbert Spencer, the Recapitulation Theory of Stanley Hall, or the Practice Theory of Karl Groos—there can be no doubt that play is one of the most powerful innate impulses, if only because it employs, and by so doing taps the energy of, most of the other instincts. In play a child will be self-assertive or the reverse, will fight, imitate, collect, and construct, each in turn, according to the needs of the moment. Play thus provides opportunities for the modifying and sublimating of the instincts and is the natural educator at this stage.

The kind of play indulged in varies with increasing age. At first it tends to be largely on the perceptual level—the shaking of a rattle, the throwing of a ball, the digging of sand, or the handling of bricks. Then in the sub-period 5 to 7, there is the introduction of a large element of make-believe. Sisson studied the free play (in a playground) of some 29 children of between 5 and 6 years, and records a great variety of imaginative games, such as playing at being in a cinema, in a shop, at being wild horses, electric-light men, Indians, wild pigs, butchers, telephone girls, dragons, steamers, Noah's ark, hunters, orchestras, policemen, and Santa Claus. Playing with dolls and playing at keeping house and being mother are common with little girls.

There are cases of collaboration, but there appears not to be much genuine co-operation until about the age of 7. Then games such as "school," requiring the co-operation of teacher and class, or "auction," requiring the co-operation of cattle, auctioneer, and buyers, become more frequent.

¹ G. H. Thomson, *Instinct, Intelligence, and Character*, 1924, p. 38.

Solitary games, however, still continue. Many boys seem to become very keen on constructive play such as Meccano, and many girls also find a real joy in making dolls' clothes. Both boys and girls find open-air activities, such as riding on a scooter or bicycle, particularly attractive; and they love picnics and camping, with all the accessories of exploring, picking mushrooms or blackberries, and paddling or bathing. Competitive games, such as chasing, hide-and-seek, "French and English," wrestling, marbles, and "conkers," become popular, especially with boys; and skipping, singing, and dancing games, dressing up, and charades with girls. But even at the end of the period of childhood there is little desire for genuine team games.

The contrast presented by the kinds of play characteristic of early and later childhood suggests that from 5 to 7 the emphasis tends to be laid on imaginative processes and fantasy, whereas later there appears to be a renewed interest in the real world. There is also indicated a definite social development from the first to the second of these sub-periods. Is this contrast substantiated by other lines of investigation and is it of real significance for the understanding of individual development?

There can be no doubt that in the 5 to 7 period children usually enjoy fairy and other imaginative stories, and that later they begin to be scornful of them and to test the value of anything told them by the enquiry, "Is it true?" They still delight in make-believe on occasions, but they are also intensely interested in the real world of birds and animals, motor-cars and aeroplanes, and in the adventures of real people. As Robert Louis Stevenson noticed, the kind of tale which delights them is one like *Robinson Crusoe*, which is very close to action and experiment. "The book is all

about tools, and there is nothing that delights a child so much. Hammers and saws belong to a province of life that positively calls for imitation.”¹ The impulse to make things is particularly powerful at this stage. The acquiring of skills is natural ; and even repetition and routine work of a suitable kind is usually enjoyed. The favourite school subjects are those involving construction, skill, and free movement, rather than language proficiency. Professor Cyril Burt² has recently found the orders of preference for school subjects from boys and girls of different ages in London. In the middle of the “realist” period, namely at 10, the orders of preference given are as follows : *for boys*—1, Handwork ; 2, Drawing ; 3, Nature Study ; 4, Singing ; 5, Geography ; and 15 (last), Scripture ; 14, Grammar ; *and for girls*—1, Singing ; 2, Dancing ; 3, Drawing ; 4, Handwork ; 5, Nature Study ; and 15 (last), Grammar ; 14, Arithmetic.

WORK AND PLAY

If early childhood was pre-eminently a period of play and fantasy, later childhood is a period of both work and play. Of course, a child’s knowledge of the external world is quietly extended in the first sub-period, but there remain surprising gaps in it. For example, according to Stanley Hall’s investigation³ of children of from 6 to 7 years of age living in Boston, 54 per cent. did not know what a sheep is like, 80 per cent. did not know what dew is, and 90 per cent. did not know the origin of flour. Such evidence not only indicates the need for the constant use of concrete

¹ R. L. Stevenson, *Child’s Play*.

² *The Primary School*, Appendix III, H.M.S.O., p. 278.

³ G. S. Hall, *Aspects of Child Life and Education*, 1907, p. 1.

objects, and not merely of their names, in the training of children at this stage, but it also enforces the value of the later natural change of emphasis. Children of 9 or 10 often show very definite desires to do something useful, to help in the work of the home, garden, farm, or shop. The instinct to construct no longer expresses itself in the making of sand castles, which will be swept away with the next tide, but in the making of a scarf, a pencil box, a book, toffee, or table mats, which have the great advantage of being of use either to the child himself or to the members of his family circle and other friends.

Many observers have drawn attention to the matter-of-factness of this period, which is sometimes even expressed in the child's attempts at writing poetry, where fantasy might, on *a priori* grounds, be expected to dominate. This realism is illustrated in the following poem written by a child of eight :

"I love to be in bed
With a pillow at my head,
And a lovely book to read.
With lovely food to eat
And a bottle at my feet."

The Young Visitors, written by Daisy Ashford at the age of 9, is typical of the realism of the period, though it is obviously an unusual literary production for that age, both in length and completeness. The pedestrian kind of fancy characteristic of childhood is illustrated by the comment on Mr. Salteena's start on a journey : "When the great morning arrived, Mr. Salteena did not have an egg for breakfast in case he should be sick on the journey" ; and by the detailed description of Ethel and Bernard's

wedding breakfast. "They had tea and coffee and sparkling wines to drink also a lovely wedding cake of great height with a sugar angel at the top holding a sword made of almond paste. They had countless cakes besides also ices jelly merangs jam tarts with plenty of jam on each some cold tongue some ham and a pig's head done up in a wondrous manner."¹ It is true that there are frequent departures from probability, which are not however due to fantasy-thinking but to actual limits in Daisy's knowledge of the real world. Thus after six weeks' honeymoon, Ethel and Bernard returned "with a son and hair a nice fat baby called Ignatius Bernard. They soon had six more children, four boys and three girls and some of them were twins which was very exciting."²

The median samples of children's drawings reproduced in Dr. Cyril Burt's *Mental and Scholastic Tests* show a similar development towards realism during late childhood.³ Whereas at 7 a child frequently confounds what he knows with what he sees, and introduces both into his drawings, by 9 or 10 there is usually a marked improvement in technique associated with an increasing realism.

CHILDREN'S THINKING

The interesting question has recently been vigorously debated as to whether there is an essential difference between the thinking of children in the two sub-periods under discussion. Binet and Stern had previously made investigations with children of various ages in regard to their interpretation of pictures. According to Binet,

¹ D. Ashford, *The Young Visitors*, 1919, p. 80.

² *Ibid.*, 1919, p. 85.

³ Figs. 53-64. Compare especially Fig. 57 (p. 387) and Fig. 61 (p. 391).

children of about 3 merely recognize the separate items in a group picture; whereas at about 6, they describe the activities of the people or animals; it is only at about 12 that they explain or interpret the whole picture. Stern agrees with this in the main, but fixes the ages somewhat earlier for his own children. This evidence cannot be interpreted to mean that the process of perception is essentially different at these "stages." Even the child of 3 who recognizes the separate items adds meaning (for example, solidity) to the lines and shapes in the picture, which is actually in two-dimensional space. There has been a development in the perception of relations by the next stage; and the still more adequate interpretation at 12 results from the perceiving of more and deeper relations. This is aided, no doubt, by the greatly increased power of attention which is characteristic of the later age.

In recent years there have been many experimental investigations concerning children's language. Although according to Stern their speech is mainly acquired in infancy, there are many developments in vocabulary and in the mastery of reading and writing which belong to the period of childhood. Descoedres¹ was one of the first to devise language (including vocabulary) tests for young children; and while the actual results obtained by the use of such tests seem to differ considerably from one investigator to another, the cumulative evidence suggests that generally the individual's vocabulary continues to increase, at least until mental maturity. On the basis of the Stanford-Binet vocabulary test, Terman concludes that there is close correlation between vocabulary and mental age. The size of the vocabularies possessed by 60 to 65 per cent. of the

¹ A. Descoedres, *Le développement de l'enfant, de deux à sept ans*, 1921.

subjects at the various mental levels are given by him in the following table¹:

TABLE II. SIZE OF VOCABULARIES

8 years,	vocabulary 3,600 words
10 years,	vocabulary 5,400 words
12 years,	vocabulary 7,200 words
14 years,	vocabulary 9,000 words
Average Adult,	vocabulary 11,700 words
Superior Adult,	vocabulary 13,500 words.

There are also other notable differences at different ages, such as, for example, the length of sentences used, or the proportion of the different parts of speech to the total vocabulary. Although in the early stages it is practically impossible to classify words used by children as parts of speech, generally the proportion of nouns seems to decrease and of verbs to increase as the vocabulary becomes larger. This is probably another example (like the differences in the recognition of pictures) which indicates an increasing interest, with age, in the perceiving of relations as opposed to the mere naming of objects.

Of even more interest have been recent attempts to approach the problem of the development of children's language from the standpoint of *function* rather than of *form*. Piaget's² adoption of "clinical" methods, at the J. J. Rousseau Institute, Geneva, for the study of children of various ages from 4 upwards has already resulted in a vast accumulation of information which throws considerable light on their thinking at different ages. By putting a great variety of problem-questions to them, such as "What makes the sun move?", "With what do you think?",

¹ L. M. Terman, *The Measurement of Intelligence*, 1919, p. 226.

² J. Piaget, *Language and Thought in the Child*, 1926; *Judgment and Reasoning in the Child*, 1928; *The Child's Conception of the World*, 1929; *The Child's Conception of Causality*, 1930.

"Where do dreams come from?", "Is the table (dog, word, etc.) alive?" etc., and having their answers and the subsequent conversations recorded verbatim, he has collected data from which he has drawn the conclusions that up to about 7 or 8, children have no idea of causation and are ready to infer from one particular instance to another without considering whether there are grounds for such inference. Before that age, their thinking is animistic and egocentric. It is essentially different from that of the civilized adult and is similar in certain respects to that of primitive man. At 7 or 8 there is the beginning of logical (socialized) thought; not until 8 or 9 is there understanding of the causal relationship; and not until 11 or 12 is formal reasoning on the verbal plane possible. Piaget's general view, that until a certain degree of maturation is reached a child's thinking is of a different type from the thinking at later periods in his life's history, has not found general acceptance among British and American psychologists. Before the publication of Piaget's works, Dr. Cyril Burt had concluded from his investigation of the development of reasoning in school children that "all the elementary mental mechanisms essential to formal reasoning are present before the child leaves the infants' department, that is, by the mental age of 7, if not somewhat before. Development consists primarily in an increase in the extent and variety of the subject matter, to which these mechanisms can be applied."¹

Mrs. Susan Isaacs' records of the behaviour of a group of children at the Malting House School, Cambridge, who were allowed a great measure of freedom to experiment in a

¹ C. Burt, "The Development of Reasoning in School Children," *Journal of Experimental Pedagogy*, 1919.

suitable environment, led her to the conclusion that much earlier than 7 children are capable of puzzling out solutions to their own problems. She observes that children often have co-existing the kind of understanding of physical causation which might be termed "scientific" together with tendencies to "magical" interpretations. She argues that the child's thinking is not fundamentally different from that of the adult ; and that where the child's attitudes and processes approximate to those described by Piaget, the cause lies in the narrowness of the field of experience and the consequent unfamiliarity with the material.

In comparing the two investigations, one difference stands out which might explain the different results obtained. The children whom Mrs. Isaacs observed were highly intelligent (their I.Q.'s ranging from 114 to 166), and they were at work on problems which may have been suggested by the environment but were also of their own choosing. Piaget's investigation was concerned with children of a greater variety of ability, especially at the lower end of the scale ; and the questions asked were artificial and therefore might not bring out the most efficient thinking of which the children were capable. It should be remembered that even adults cannot think effectively nor find a solution to an intricate problem until they have lived with it and felt its weight. Another point that Piaget seems to ignore is that primitive man is sometimes objective in his thinking for practical purposes, as well as animistic in his interpretations.

The balance of evidence seems to favour the view that there is no hard-and-fast line at 7 or 8, before which thinking is egocentric and after which it becomes logical, but that development is rather " a continuous advance in scope and

clarity of noetic synthesis and in the ability to handle experience in more and more complex forms.”¹ This conclusion is in line with Spearman’s general view of the essential unity of all the cognitive processes.

Throughout the period of childhood there is a steady development of powers of attention and also of general intelligence. The results obtained from the measurement of native ability indicate a gradual maturing of intelligence, the annual increments being about equal from 5 to 12. At what stage then should a child be taught to read? It is part of the accepted English tradition that children should be able to read at the age of 7 or 8, when they are promoted to the primary from the infants’ school. This rule is laid down without any consideration of the individual’s general intelligence. Recent American research² has resulted in the view that formal instruction should be postponed until the child’s *mental age* is 6 years and 6 months, and that in the long run it actually pays to follow this course.

EMOTIONAL DEVELOPMENTS

As we have seen, towards the end of the period of infancy, largely through the development and functioning of the sentiment of love for his parents, the individual becomes more stable in his emotional life. In the right kind of family circle he is generally obedient. He is less variable in his emotional reactions and consequently his social relations become more settled. The period from 5 to 7 is in a very real sense an emotional “springing-up.” There usually is, and should be, an increasing detachment from his parents, and a greater interest in, and friendliness

¹ S. Isaacs, *Intellectual Growth in Young Children*, 1930.

² M. Morphet and C. Washbourne, “When Should Children Begin to Read?” *Elementary School Journal*, March 1931.

with, other children. An *only* child may therefore invent an imaginary child companion to meet a real lack in his social environment, but this is not enough. If he enters school without having had practice in making contacts with other children, he may not be able to make friends easily, and there may consequently be an arrest in his social development. If he is highly intelligent, the difficulty in making contacts may be accentuated. It is therefore important that parents should prepare beforehand for the child's first going to school, so that the new social situation will be fully utilized when it arrives.

In some cases of abnormal development there may be too great a dependence on one of the parents. This is most likely to happen if the relations between the father and mother are unhappy, and if one—usually the mother—lavishes the love which should have been directed to the partner on the baby. This may cause in the child a “parent fixation” which may lead at a later stage to inability to fall in love with an unrelated person, or to definite homosexuality. The key to mental health in the period of childhood lies in building up adequate self-reliance and independence; and this development occurs naturally through the making of friendships with equals and of contacts with juniors. In the earlier period of infancy, the love of parents (or their substitutes) was essential for the proper unfolding of the emotional life of the individual; but at the beginning of childhood, as Gesell says, “the very teachability and conformability to elders constitutes a danger, if exploited and if not balanced by his experience as an elder to those his developmental juniors.”¹

¹ A. Gesell, *The Mental Growth of the Pre-School Child*, 1925, p. 237.

When the psychological weaning from the parents has been satisfactorily accomplished, the succeeding years of childhood (7 to 11 or 12) may be expected to be a period of consolidation. According to Eng, who has developed experimental methods of measuring emotions and, by their use, has been able to compare the pleasure and displeasure responses of a group of children of from 10 to 12 years of age with a group of subjects between 19 and 25 years, pleasure is more readily roused during spontaneous activities in children than in adults. Displeasure emotions appear to be stronger and of longer duration in adults; and "on the whole there is a stronger tendency shown in children . . . to psychical activity coloured by pleasure."¹

Late childhood appears, then, to be a relatively carefree period, characterized by emotional stability, although developments are proceeding. There is a strengthening of the self-regarding sentiment and an extension of the number of persons, especially equals, who are loved. This social development is indicated by the kinds of games which are most popular. Genuine co-operation in play begins about the age of 7 and increases towards the end of the period. According to a recent investigation by Hetzer,² children below the age of 10 seem to prefer games of the action-song variety, in which there are definite rules prescribing everything which is to be done, whereas after 10 they seem to prefer games, such as hide-and-seek, in which there is a freer organization, only the general scheme being prescribed.

There is a closely related moral development. No

¹ H. Eng, *The Emotional Life of the Child*, 1925, p. 107.

² H. Hetzer, "Das volkstümliche Kinderspiel," *Wien. Arb. z. pad. Psychol.*, 1927.

doubt this will vary somewhat according to the native ability and the social environment of individuals ; but in general until about 5 or 6 the morality of a child is largely that of obedience to authority (usually the parents). Afterwards with the growth of friendships with equals, there tends to be developed a certain loyalty to individuals of the same age or status. A boy tends to side with his peers, it may be against authority. He will not "split" on them, even if he thinks that they are in the wrong. There is less harshness in his attitude to others and a noticeable increase in tolerance ; though as yet the individual does not seem to have advanced to the stage of abstract moral judgments.

GENERAL CONCLUSION

Later childhood is a period of physical health and activity, of relatively effective adjustment to the material world and of emotional stability. "Everything," says Stanley Hall, "suggests the culmination of one stage of life as if it thus represented what was once, and for a very protracted and relatively stationary period, the age of maturity in some remote, perhaps pigmoid, stage of human evolution."¹ We may not accept Dr. Hall's implied Recapitulation Theory of individual development, but there can be no doubt that in many respects later childhood is more like maturity than the intervening period of youth. There is endurance, vitality, and resistance to fatigue. There is relatively little danger of overwork. The individual has attained a measure of independence of his parents and a certain mastery of himself and his limited world. He is contented and happy and not easily depressed. He

¹ G. S. Hall, *Adolescence*, 1904, Preface, pp. ix-x.

has adjusted himself to his school and takes easily to order and routine. This is the period for regular and hard work, for the acquiring of the tool subjects—Reading, Writing, and Arithmetic—which will open up new avenues of intellectual adventure for him in the next period.

It must never be forgotten, however, that the desire for exploring the world and for open-air adventures has, at this stage, all the urgency of a powerful instinct ; and that the interest in making things is also strongly marked. There must therefore be a proper balance preserved between bookwork and practical (especially open-air) activities. This can only be attained if the approach to all work, even including literary studies, is practical, active, and creative, rather than academic, passive, and informative. The interest in making things “ should not be limited to an occasional lesson in handwork but should pervade almost the whole of the time table.”¹

¹ *The Primary School*, H.M.S.O., 1931, p. 272.

CHAPTER IX

YOUTH

YOUTH or adolescence has already been defined as extending from the beginning of the pubertal changes, about 11 in the case of girls and 12 or 13 in the case of boys, until the age of 21 or 22 years, when physical growth is practically complete. The period is recognized by novelists and dramatists, as well as by physiologists and psychologists, as being critical in the life-history of the individual. It is sometimes a period of storm and stress ; or it may be predominantly a period of adventure and romance ; but in either case it seems to have developmental significance comparable to the period of infancy.

PHYSICAL DEVELOPMENT

There have been various investigations concerning the average increases in height and weight at different periods of life ; and there is general agreement among investigators that there is a considerable acceleration in the rate of growth in early adolescence. For example, from the measurements given in the table (after B. T. Baldwin),¹ it will be seen that the average annual increment in weight for boys for the five years from 7 to 12 is 2.5 Kg., whereas the average annual increment for the five years from 12 to 17 is 4.7 Kg. Similarly, the average annual increment in height (for boys) during later childhood is 4.6 cm. and

¹ See p. 95.

during early adolescence is 5.6 cm. ; or in strength of right arm, 2.2 Kg. as compared with 4.1 Kg. It will be noticed that the acceleration in the rate of growth in girls occurs earlier than in boys ; but in both cases there is a definite springing-up after the steady growth of later childhood. It is not surprising that at this stage many an individual experiences some difficulty in controlling his greatly increased bulk of body, and passes through a hobbledehoy stage. He temporarily loses his earlier mastery of himself, and has to develop new controls of his new powers.

The difficulties experienced by the individual will obviously be increased if, as sometimes happens, different parts of his body grow disproportionately. For example, his hands and feet may seem to him at one stage to be too large. His awareness of this fact may be accompanied by considerable uneasiness in his mind as to his end-state. The development of his vocal apparatus may be relatively sudden, so that he may lose temporarily that perfect control of his voice which he once had. His voice breaks ; and for some time he may be uncertain as to whether he is going to begin to speak loud or soft, high or low.

During youth, the sex functions also mature. The genital organs grow rapidly in the two years before puberty, during puberty, and in the immediately succeeding years. In the case of the girl, there is the first menstruation, accompanied by enlargement of the thyroid, and a considerable change in the whole metabolism of the body, which was previously very little different from that of the boy. Associated with this increased metabolic activity, there is usually increased nervous sensibility. In the case of boys, the maturing of the sex-organs seems to be somewhat later, on an average, than with girls, judged at least

by the appearance of the distinctively male secondary sexual characteristics.

As might be expected, the rapid growth and the other physiological changes characteristic of the third springing-up period temporarily increase the liability of the individual to slight disorders. Girls may show signs of anæmia, nerve strain, or spinal curvature. They tend to be more easily exhausted by hard work or play. Boys may develop lung or heart trouble ; or slight but annoying symptoms, such as pimples, which indicate some deviation from the norm of perfect health.

Towards the end of the period of adolescence, the rate of growth gradually decreases to vanishing-point. At the close the individual has practically attained a maximum in height, weight, and muscular strength, and he or she is also sexually mature.

MENTAL DEVELOPMENT

Various methods have been used for obtaining data concerning the mental developments characteristic of adolescence. First, there is the *questionnaire*, the method of obtaining answers to carefully formulated questions from adolescents or from other individuals who are able to recall their adolescent experiences. This method is open to obvious objections, but its results are frequently suggestive and may be extremely useful in guiding more rigidly scientific investigations.

Then there are diaries and *autobiographies*, written for other purposes, but frequently illuminating in regard to the characteristics of youth. For example, Marie Bashkirtseff's *Journal* is a remarkable description of the period from 12 to 23 as it occurred in a delicate, unstable girl, in whose

mind there waged a perpetual conflict between romance and ambition, which only ended with death at the age of 23. Mr. H. G. Wells's recent *Autobiography*, written with such amazing candour, contains an illuminating description of his development during adolescence.

Thirdly, there are *studies by adults of the behaviour of adolescents*. Unfortunately, the most detailed of these are of the unusual—defectives, neurotics, and delinquents—but even these sometimes throw light on the adjustments natural to the period. Lastly, there are *objective measurements* of the abilities and achievements of adolescents.

The answers to the questionnaire on adolescence¹ which were obtained from 200 University students and from a group of men and women who had gone to work early have been dealt with in detail in *Youth*.² It will be most useful here to relate the tentative conclusions drawn from these replies to evidence obtained by other methods.

INTELLECTUAL INTERESTS

The first question:—

“Indicate any developments in intellectual interest which occurred *during adolescence*. For example, what were your favourite occupations and your favourite subjects of study? Account as far as possible for your preference,”

brought some illuminating answers. Among the students, a big proportion (64 per cent.) became interested in literature, including reading and biography; and a number (33 per cent.) indicated an increased interest in science and mathematics.³ Notwithstanding these intellectual develop-

¹ See pp. 100-1.

² O. A. Wheeler, *Youth*, 1933, pp. 35-91.

³ *Ibid.*, pp. 64-5.

ments, it is significant that 33·5 per cent. mention games and open-air activities as their favourite occupations; and 35 per cent. prefer some form of practical activity, such as carving, carpentry, drawing, photography, and "pottering with mechanical things" (among the men); and needlework, domestic work, drawing, painting, and playing the piano, and—one only—mending mechanical things (among the women). Thus a relatively high proportion find their greatest joy in activities where the growing body and the growing mind are exercised concurrently. It should, however, be noticed that, especially among the students, but to a less extent also among the workers, there appeared to be a shifting of interest during the period to literary and more abstract studies.

Signs of this change are beginning to make their appearance as early as 13, according to Dr. Cyril Burt's results regarding the order of preference of the various school subjects in the Elementary School.¹ Whereas with boys of 10, Handwork stands first in order of preference and Composition twelfth, by the age of 13, while Handwork remains first, Composition becomes sixth. A similar change is noticeable in regard to the girls during the same interval. Reading comes up to second place from the sixth, Composition third from the eighth, while Handwork remains fourth. There seems to be a movement of interest towards humanistic studies, though there is still an urge towards construction and a great need for the joint exercise of mind and body.

The use of intelligence tests on a large scale has resulted in the general acceptance of the view that an individual's intelligence, as measured by standardized tests, tends to

¹ *Report on the Primary School*, Appendix III, H.M.S.O., 1931.

increase by fairly regular annual increments until about 16 or 17, and then reaches a maximum.¹

From an analysis of the responses to absurdity and other forms of reasoning tests, it seems probable that it is only in adolescence that an interest in rational as distinct from empirical explanations develops. It is not so much an enhanced capacity to reason that is indicated, as a new interest in reasoning.

Mr. H. G. Wells's description of his efforts to obtain satisfaction for his scientific interests in face of almost overwhelming difficulties of health and finance shows how dynamic and urgent the desire to understand the Universe may be during adolescence. It is of course true that Mr. Wells is not typical. The urge to understand was unusually powerful and, notwithstanding his own statement to the contrary, the ability to perceive relations was more extensive in his case than is usual. But there is something similar in kind, if not in degree, in most individuals during the period of youth. It has been said that there are only two classes of intellects—those like Columbus, that discover new continents, and those more conservative minds, that play for safety. Into whichever of these categories an individual may have to be placed when he has reached maturity, it is safe to assume that at least in youth he will be in the first class of intellectual adventurers.

A broadening and deepening of intellectual interests is, then, characteristic of youth ; but this does not appear to have been sufficiently recognized in some English Public Schools. For example, Mr. Robert Graves analyses the depression which he experienced when he was a boy at Charterhouse as being largely due to the Public School

¹ See Diagram 3, p. 100.

spirit which despised scholarship. Those who were keen tended to be regarded as peculiar. "Unless they were good at games and willing to pretend that they hated work as much or more than the non-scholars and ready whenever called on to help these with their work, they usually had a bad time."¹ Mr. Alec Waugh's *Loom of Youth*, which is largely autobiographical, was written when he was only 17. His scathing criticism of the worship of athleticism in Public Schools is interesting evidence of an unsatisfied need for intellectual adventure, which those responsible for the organization of the Public School which he attended had not recognized as not less characteristic of the springing-up period of youth than the desire for games and physical exercise.

EMOTIONAL DEVELOPMENTS

Towards the end of the period of childhood, the normal healthy individual is not only in complete control of his body but he is also master of his emotions. The sentiments of self-regard and of love of his parents and equals are sufficiently developed to control his momentary feelings, and there is consequently a stability and poise in his emotional life which shows itself outwardly in a general consistency of conduct. Then comes the third springing-up period. New powerful emotions appear, and other emotions, which had perhaps made an appearance earlier, are so intensified that the whole pattern of the emotional life is disturbed. The sentiments which have developed are no longer sufficiently powerful to control the new feelings and impulses. There is an interval of emotional instability before the fundamental adjustments of adoles-

¹ R. Graves, *Good-bye to All That*, 1930, p. 63.

cence are made. This instability shows itself in many ways, but chiefly in a kind of waywardness and a tendency to go from one extreme to the other. For example, the boy or girl who is ambitious and full of conceit on occasions is also easily depressed and discouraged. The incompleteness of adjustment also shows itself, as it did in the period from 5 to 7, in a tendency to daydream and fantasy.

A daydream usually represents the ideal fulfilment of an unconscious wish ; and the daydreams of adolescents are often indicative of urges and desires which only later, or perhaps never, find overt expression in their behaviour. The answers received to the question :—

“ Do you remember having systematic daydreams (*a*) during childhood, and (*b*) during adolescence? If so, of what kind? Do they still continue?”

showed that daydreams are more frequent in adolescence than in childhood, and that there are two main kinds indulged in at this period, namely egoistic (including vocational), and romantic, daydreams.

The daydreams recorded by the group of University students were very varied, and included imagining the self distinguished in sport—cricket, football, tennis, hockey, and swimming—in the performance of heroic acts of life-saving or bravery in war, and in other forms of dominance, such as being “ first in an examination,” winning a scholarship for the University, or being strikingly successful as a public speaker or a singer. In some cases, they reveal an urge for less restriction and for a more favourable environment than that which actually surrounded the adolescent at the time of dreaming. This was especially marked among the workers who also answered the question, and probably accounts for the higher percentage of them, as compared with University students, who were given to

systematic daydreaming.¹ Thus one man, who went to work in a cotton mill, half time at 10, and full time at 13, daydreamed of going to the University and also of being a farmer and a sailor. One woman, who was apprenticed to dressmaking at 13, imagined herself riding on horseback. Some gained satisfaction from imaginary motor-bicycles, grand pianos, and beautiful homes which they did not actually possess. A Manchester University student imagined himself "living in the country"; and a Cardiff woman student daydreamed of "being a gipsy." Quite a number in both groups gained pleasure from pretending that they had facilities for foreign travel within their reach, and a few (though surprisingly few) that they had great riches.

The most frequent type of daydream was definitely vocational, the individuals imagining themselves as being musicians, great scholars, teachers, clergymen, missionaries, surgeons, University professors, authors and authoresses, members of Parliament, soldiers, administrators, and one—a highly gifted worker with little scope for his native ability—as being the Prime Minister.

These egoistic and vocational daydreams indicate an increased sense of self, a growing need for power and independence, and a deep-set desire to find a vocation. They suggest that one of the major adjustments which should characterize the period is the finding of a vocation and the shouldering of real responsibility in the workaday world.

Another type of daydream which was fairly common, though not nearly as usual as the egoistic, was the romantic kind, in which individuals imagined themselves falling in

¹ O. A. Wheeler, "Variations in the Emotional Development of Normal Adolescents," *British Journal of Educational Psychology*, Vol. I, Part I, p. 5.

love or being loved, being married and having homes of their own. These imagined romances seemed to be more common among the women than the men, and apparently served as a kind of compensation against the failure of the environment to provide the real experience. Often, both egoistic and romantic impulses expressed themselves in one fantasy. For example, one woman recorded a daydream in which she was "pretty and very accomplished" and "with a boy at (her) feet." Another dreamed of marrying a lord and returning with him to her native village. A man imagined himself performing an act of heroism in the presence of the girl whom he loved. The vocational and romantic elements are obviously combined in the daydream described in the following words: "During adolescence I always imagined myself the mother of a family. These imaginary children were never babies but always boys and girls of from 10 to 15 years of age, and much in need of my help. There were quite definite types—one was a strong athletic boy (I knew him quite well); another a dreaming imaginative boy; another very naughty, and two girls. The father was always a vague person and different from time to time." There was also another interesting case in which the husband was conveniently killed off and the heroine "lived for the children," and thus presumably found freedom and a vocation.

The rise or intensification of the sex-emotion which in the few found expression in romantic daydreams, in the great majority expressed itself openly in an awakening of interest in a member or members of the opposite sex. Thus 91 per cent. of the workers and 83.5 per cent. of the University students who answered the questionnaire recorded some sort of awakening in this respect. Many

confessed to "falling in and out of love" continuously during the period. There was one man, for example, who "had lost count"; and another, from a boys' Secondary School, who declared, "There was some sort of competition between us as to who should do best in this respect." A number fell in love with someone much older than themselves, who acted as a kind of mediator in the transition from love of parents to the love of a possible mate. A curate, a minister, a conductor of an orchestra, an actor, a schoolmaster, and a music-mistress figured as temporary aids to development in this direction. Frequently there was a period of withdrawal after the first period of attraction to the opposite sex and before the individual fell seriously in love. This period of withdrawal, well described by one man as a time when he developed "a healthy contempt for girls," serves the useful purpose of giving the individual time to gain control of the newly awakened sex-emotion.

The diaries, poems, and autobiographical descriptions of adolescence confirm the general conclusion arrived at by the use of the questionnaire, namely, that an awakening of interest in the opposite sex is usual during the period. It is obviously related to the second great adjustment, characteristic of maturity, namely, the finding of a mate. Thus Mr. H. G. Wells's record¹ of his falling in love with his cousin and later with a fellow-student, without any diminution of the urgency of his ambition, rings true. Marie Bashkirtseff's *Journal* is full of alternations between a consuming desire to be an artist and an equally powerful urge to attract and hold the interest of some man. Her instability, depression, and restlessness arise out of this conflict and of her failure to resolve it in real life.

¹ *Experiment in Autobiography*, 1934.

Shakespeare rightly interpreted the third act in the drama of individual development as being that of "the lover"; but "the soldier" also is already in the wings; and difficulties will inevitably arise if the two major adjustments, the finding of a mate and the finding of a vocation, cannot be roughly synchronized.

The increased interest in the opposite sex is, of course, only one of many related changes. There are other social emotions which either make their first appearance or are greatly intensified during the same period. There is a marked tendency to hero-worship members of the same sex and to make important friendships. This was clearly revealed in the answers to the questionnaire. There is also a powerful urge to team and group life. Team games are now really enjoyed, and there is a noticeable advance as compared with the earlier period in willingness to subordinate the self to the group. An intense loyalty to school or college or group often develops.

Frequently there is a deep sympathy with, and a real desire to help, the less fortunate members of society. For example, the genuineness of this "social" awakening is plainly evident in the variety of forms of social service voluntarily undertaken by adolescents. University students spend their holidays in camps for the unemployed; they give their time freely to scout and guide work or to University settlement ventures. Many experience what is virtually a "social" conversion, a new orientation of the feelings away from the self and towards others, especially towards those who have been worsted in the battle of life. J. S. Mill describes in his *Autobiography* how he spent the years from about 15 to 20 in planning a general improvement in the social conditions of the world. After-

wards he experienced a heavy dejection of spirit, when he realized how little he could accomplish; and he even seriously thought of ending his own life, so overcome was he with the futility of his endeavours. This swing of the pendulum from enthusiasm to depression is another illustration of the emotional instability of the period.

During youth, there is usually an intensification of æsthetic and religious feelings as well as of sexual and social emotions. Thus in answer to the "Adolescence" questionnaire, almost all who replied recorded an increase in the appreciation of Nature, poetry, music, or art. Although only a small minority (8·5 per cent.) remembered having had religious experiences in childhood—at that stage most of them merely took for granted what their parents and elders told them—the majority (61·5 per cent.) claimed to have had real religious experiences during adolescence. In a proportion of cases (28·5 per cent.) the writers stated that they had experienced "conversion"; in others the changes seemed to be more gradual. Often early religious enthusiasm cooled, and the intensification of religious emotions was followed by doubts and difficulties, just as positive interest in the opposite sex may be superseded by negative withdrawal before the final adjustment is made.

A conversion, more typical of the nineteenth than the twentieth century, was described by one man brought up in the Wesleyan Connexion, in the following words:

"At the age of 17 I attended a mission service held by a lady missionary (those were days of religious revivals). She spoke from the text, 'Look unto Me, and be ye saved, all the ends of the earth: for I am God, and there is none else.' . . . I stayed to the after-meeting for prayer. From that time my whole outlook upon life was changed. I realized

an inward peace of mind and a deep sense of happiness. I took a delight and pleasure in all things spiritual. The trivial things of life became distasteful. I preferred religious services to socials and tea-parties. I began to give Sunday School addresses and sermons. We formed a Young Men's Christian Association. We held prayer meetings, distributed tracts and religious newspapers, held open-air services, visited public houses and lodging houses and gave short talks. I was red-hot for the salvation of the people and honestly believed that the whole village could be won for Christ and His service. . . . As the religious fervour and enthusiasm cooled, I was not thrown back to my previous state of mind and life . . . it rather solidified and developed other important changes which I had never previously realized. . . . It took in the whole of life—religious, social, industrial, moral, and intellectual.”

The period of youth is recognized by most religious bodies as being the time for adjustment to the spiritual universe, and for first membership of religious organizations. Starbuck's¹ empirical study of the growth of religious experiences in a large number of American Protestants led him to the view that conversion is a distinctly adolescent phenomenon, belonging almost exclusively to the years between 10 and 25. The peak years for girls were found by him to be 13, 16, and 18, and for boys 12, 16, and 19; though on the whole girls tended to be slightly more precocious than boys in regard to religious awakening.

It is probable that Starbuck's view is a false simplification of the facts of religious development, for there are cases of mystical conversion in maturity as well as of adolescent conversion. But there can be no doubt that a religious

¹ E. D. Starbuck, *The Psychology of Religion*, 1911.

awakening, whether it be of the nature of a conversion or of a gradual growth, constitutes the third major adjustment characteristic of adolescence. The body of religious beliefs, feelings, and behaviour, which have been socially received in childhood, are subjected to the impact of the individual's own intellectual criticism and his own emotional needs ; and this system is accepted and modified, or totally rejected, according to how far it synthesizes the individual's own experiences.

GENERAL CONCLUSIONS

In early adolescence, not only is there rapid physical growth and the maturing of the sex-function, but there is also a general increase both of emotionality and of intelligence. Intensified feeling for the self, new sexual, social, æsthetic, and religious emotions, crowd in upon the individual and disturb the previous organization of the sentiments. The individual is delivered, at least temporarily, from the self-centredness of childhood. There is the promise of a new orientation of the emotions away from the self and towards a mate, towards society in general, and towards the spiritual world. In a very real sense, there may be a rebirth of the personality. Physically, intellectually, and emotionally, early adolescence is a springing-up period. It is followed by a period of settling-down (later adolescence), during which, with the aid of a fully developed intelligence, the individual again brings order and unity into his more complicated emotional life.

If infancy be regarded as primarily a period for adjustment to the physical environment, youth is the time for adjustment to other people, to the existing social order, and to the spiritual environment. The three major ad-

justments involved in this are the development of psychological independence and the finding of a vocation ; the development of a hetero-sexual attitude and the finding of a mate ; and the development of a social and moral conscience, tending towards the formulating of a point of view concerning society and concerning life in general.

Ideally these three adjustments should take place in harmony with one another ; but under the conditions of modern civilized society there are some disharmonies which arise from the environment and not from within the adolescent himself or herself. The gradual lengthening of the preparation period for entrance into many professions introduces a new complication in the way of the emotional development of some adolescents. The attainment of biological maturity may take place under modern conditions years before there can be economic independence, and difficulties may therefore be experienced in synchronizing the three major adjustments of adolescence. The self-help movement, which, largely through stress of economic circumstances, is beginning to be a feature of English (as of American and Scottish) University life, would seem to be psychologically sound. It is surely of the greatest value to students to have a taste in their vacations of real work and responsibility, whether as clerks or teachers, in the harvest or at sea, acting as interpreters or carrying the hod. Useful work is educative of the emotions, and to have some measure of economic independence is of considerable help in the long preparation period before entrance on life's duties.

This difficulty, caused by the long preparation period necessary for entrance into the professions, is slight compared with that arising from modern industrial conditions

and particularly from widespread unemployment. A young man or woman entering upon a long period of training for a profession has at least a definite ambition and a life-plan, with the aid of which he or she can hold other impulses in check ; but an unemployed adolescent, on the dole and with no experience and no prospect of work, has a very poor chance of harmonious emotional development. His times are bound to be out of joint. He finds a mate, perhaps, before he finds a vocation, and before he is trained by work to accept responsibility and to consider the rights and needs of others. It is therefore no exaggeration to say that the widespread conditions of unemployment constitute the most serious environmental menace to the full and harmonious development of modern youth. The raising of the school-leaving age and even the shortening of the hours of the working-week and the pensioning off of the oldest workers, which may seem at first sight to be a luxury policy, is surely, in the light of the psychological facts just reviewed, the minimum provision which a civilized society should make to provide the environmental conditions necessary for the healthy many-sided development of its adolescent population.

CHAPTER X

MATURITY

“IF we wish to scale Mont Blanc or visit a thieves’ kitchen in the East End, or go down in a diving-dress or up in a balloon, we must be about it while we are still young,” says R. L. Stevenson. “Youth is the time to go flashing from one end of the world to the other both in mind and body ; to try the manners of different nations ; to hear the chimes at midnight ; to see sunrise in town and country ; to be converted at a revival ; to circumnavigate the metaphysics, write halting verses, run a mile to see a fire, and wait all day long in the Theatre to applaud *Hernani*.”¹

The view that youth sees the end of plasticity and intellectual adventure needs careful examination, for, if true, it should have a considerable influence on general educational policy and particularly on the importance to be assigned to facilities for systematic education after maturity.

There can be little doubt that growth of body usually ceases in the middle twenties, and that sexual maturity is also reached before the end of the period of youth. According to William James, there is a similar ending of the period of mental plasticity. “Hardly ever,” he says, “is a language learned after twenty spoken without a foreign accent.” Not only does it become increasingly difficult with increasing

¹ R. L. Stevenson, *Crabbed Age and Youth*.

age to form new habits, such as those of speech, which involve bodily adjustments; but, according to James "the period between twenty and thirty is (also) the critical one in the formation of intellectual and professional habits," and "by the age of thirty, the character has set like plaster, and will never soften again."¹

Sir John Adams, who was usually an optimist concerning human development, accepted this view that at the age of 25 "the really fruitful plastic period ends"; and he did not shirk the resulting practical conclusion. "The ratio between the effort expended and the result produced is so unfavourable as compared with what is the case at earlier periods that we are discouraged from all attempts at systematic education after maturity, unless under the most exceptional circumstances."² Sir Percy Nunn also appears to acquiesce in James's opinion, that in the middle twenties "old fogeydom already lays his hand on most of us, little as we may expect it; there are no more revolutions, but only consolidation and humdrum progress along lines already fixed."³

On the other hand, the striking success of some experiments in Adult Education would lead us to suppose that at least in some cases educability is more lasting than this hypothesis of old fogeydom would suggest. The Adult Education Committee which reported to the Ministry of Reconstruction in 1919, after extended and careful review of the various experiments in Adult Education conducted by Universities and by voluntary organizations such as Adult Schools, the Workers' Educational Association,

¹ W. James, *Principles of Psychology*, 1890, Vol. I, pp. 121 and 122.

² J. Adams, *The Evolution of Educational Theory*, 1912, pp. 65-6.

³ T. P. Nunn, *Education: its Data and First Principles*, 1930, p. 170.

Women's Institutes, as well as in the Army, Navy, and Air Force, came to the conclusion that "mental growth, and therefore the capacity for education, persists to a point in life which, while it varies, no doubt, with the characters and circumstances of different individuals, is subsequent to the end of even the longest period of formal education."¹ It accepted as a fact that could not be seriously questioned that "continuous study is accompanied not merely by a growth in knowledge but by a heightening of intellectual capacity among men and women of mature years"; and drew the practical conclusion that "effort and expenditure applied to education may yield an increasing return up to a far later age than that to which it has hitherto been devoted upon any considerable scale."²

It is unfortunate that there have been fewer scientific investigations of the characteristics of maturity than of the earlier periods in the life-histories of individuals. The one big-scale attempt to measure the intelligence of almost 2 millions of adults, in connexion with the recruiting of officers and soldiers for the American Army³ in the War, yielded the surprising result that the average mental age of the men examined was about 13 years. The distribution round the average was approximately that of the "normal" frequency curve, and very much the same as the distribution of marks in the intelligence tests set in the Civil Service examination (Clerical Class) in this country.

Although there were complications in the American

¹ *Final Report*, Adult Education Committee, H.M.S.O., 1919, p. 77.

² *Ibid.*, p. 78.

³ R. M. Yerkes and C. S. Yoakum, *Army Mental Tests*.

⁴ C. Burt, "The Mental Differences between Individuals," *British Association Report*, 1923, p. 229.

survey of the intelligence of adults, due to racial and language differences, which would perhaps justify a suspension of judgment regarding the average mental age of the group, there can be little doubt that the Army Tests support the view that the average intelligence of adults (as measured by such tests) is not superior to that of adolescents, and that the age at which the growth of intelligence ceases is lower than might have been previously expected. The general consensus of modern psychological opinion places the upper limit at about 16, though it is recognized in some quarters that development probably continues to 17 or 18 in the case of individuals of superior intelligence.

Professor Godfrey Thomson has expressed some doubt of the sixteen-year limit of intelligence, largely on the ground of the nature of the tests used. He points out, for example, that the Otis Advanced Test measures the work that can be done in a certain limited time, and the limit to the score is not a limit set by intelligence but by time. He contends that other tests for adults which do not involve this time-factor are also unsatisfactory because it becomes increasingly difficult towards the top end of the age-scale to devise questions which are hard enough to show the differences which may exist and which are confined to material which is the common property of everyone. "Perhaps the curve turns at 16," he says, "just because it is impossible to make tests which both are hard enough to extend the older cleverer subjects and also are confined to common knowledge for their materials."¹

It is significant, however, that the growth-curve of ability arrived at by investigators like Richardson, whose

¹ G. H. Thomson, *Instinct, Intelligence, and Character*, 1924, p. 223.

measurements of intelligence were confined to younger subjects and therefore are not influenced by the difficulties to which Thomson refers, also indicates that by 11 years a level of over 80 per cent. of maturity has been reached and that it seems probable by extrapolation that the rate of growth of intelligence diminishes to almost vanishing-point by 18.¹ We must therefore accept the unwelcome conclusion, at least in a negative form, that there is no evidence from the use of mental tests to justify a belief that there is much (if any) growth of general intelligence in the average individual after about 16. Neither, however, is there any evidence to suggest that there is any decline of native ability during maturity.

Are there then no real developments in intellectual life during maturity? To draw this conclusion from the limit to the growth of intelligence revealed by experiment would not only be to misinterpret the meaning of general intelligence, but also to misunderstand the essential nature of cognition. Professor Spearman's contribution to modern psychological thought is of outstanding importance in this connexion. He has shown that the attainment of any new knowledge or idea can be analysed into three ultimate forms of process. There is, first, the awareness which everyone has of his own experience. Secondly, there is the power, when two or more ideas are given, to cognize relations between them. And, in the third place, there is the power, when an idea and an appropriate relation are given, to educe the nature of the correlative idea.²

The evidence concerning the "maturing" of intelligence

¹ See Chap. VI, Diagram 3, p. 100.

² C. Spearman, *The Nature of Intelligence*, 1923, Chaps. IV, V, and VII.

undoubtedly points to the conclusion that the three neo-genetic functions distinguished by Spearman—or at any rate, the second and third of them—reach their highest point at a surprisingly early age, but then retain it until surprisingly late (in Spearman's opinion until about 80). Age, then, does not appreciably diminish the fundamental cognitive powers ; but experience does greatly affect the application of these powers to particular cases. The third principle of the eduction of the correlative idea obviously makes possible transcendence from that which is present to that which is past or future. For example, suppose that from the idea of the “finite” and the relation of “oppositeness” an individual educes the conception of “infinity.” This was not given in experience but is a *new* mental content. It is obvious that the new item (infinity) could only have been generated, provided that the other two items (the finite and the relation of opposites) had already been acquired. Another individual, of equal intelligence with the first, might fail to obtain the original idea because he had not had the requisite experience. It is, then, true that the application of the power of educing correlates may be extended with the growth of experience, although that power itself may not increase after the adolescent stage.

One of two kinds of changes in thought may occur with the growth of experience. On the one hand, the mastery of an abstract relationship may endow its possessor with a new fount of originality. Or, thought may be conventionalized and the educing of new correlates may be impeded by past experience. It is only in this second case that we are justified in assuming “old fogeydom.” In the first case, originality and creativeness of mind may actually

increase during maturity. Experience of varied relationships, as well as the requisite native ability, seems to be necessary for inventing, constructing, or creating, whether in professional life or in fiction, art, science, or philosophy. The broadening and deepening of experience, even the "taking of pains" may be necessary before even the genius can produce his "magnum opus."

What is true of the genius is probably also true in greater or less degree of the majority of adults. Their intelligence may not increase after 16, but their special interests develop. Whether or not they accumulate knowledge will depend on their retentiveness. Some of them will perhaps forget as much in one direction as they learn in another; but even in this case there is always the possibility that by a natural process of selection the knowledge which is retained will be more closely knit together and the result may be an increased power of original thought *within special fields of experience*.

In some cases, at least, the growth of experience has also another effect. Not only are more relationships perceived between items of knowledge, but relationships between relationships become possible, and the whole or the major part of the knowledge possessed falls into a more ordered system. New guiding ideas may therefore be generated, and a finer perspective may be reached than could ever have been attained without the extended experience.

It has already been pointed out that the cognitive side of experience is never separated from, but is always inter-related with, the feeling and conative aspects. Any developments in the emotional life or in the customary activities of an individual may intensify his power of thought in particular directions. His special interests and

conative drives may mean that he tends to use his intelligence more in certain fields of experience than in others. It is therefore necessary to examine the main changes in the emotional and conative aspects of experience which are usual during maturity.

It is generally agreed that as the individual grows older, he or she tends to become more capable of degrees of emotional response and to be better able to delay a response to an appropriate season. Self-pity becomes more restrained and, in general, control of the emotions is increased. No doubt there are exceptions—men of mature years who will be as angry at failing to “hole a putt” as they would be if they were intentionally assaulted, and women who will be hysterical at losing a game and momentarily hardly less distressed than they would be at losing a child. But, whatever their age, these cannot be regarded as emotionally mature. Usually, however, there is a greater power of graded response and of inhibition with increasing years. The average man or woman of 40 has greater power of control of emotions than the average man or woman of 30.

Professor June Downey has recently devised tests of temperamental qualities, and has recorded the scores in the various tests in individual cases in the form of graphs or will-profiles.¹ The higher integration and the greater power of inhibition in adults is suggested from a comparison of their will-profiles with those of adolescents. According to Professor Downey, “the adolescent runs high, *relatively*, on the aggressive traits, such as motor impulsion, reaction to contradiction and to opposition, but low on such traits as motor inhibition,

¹ See Diagrams 5, 6, and 7, pp. 193-5.

flexibility, interest in detail and co-ordination of impulses.”¹

In addition to this general difference with increasing age, there are also special differences due to the flowing of energy in maturity along channels largely determined by the characteristic developments of adolescence. The major adjustments of youth—the finding of a vocation and of economic and psychological independence, the development of a hetero-sexual attitude and the broadening of social emotions, and lastly the finding of a philosophy of life and the acceptance of a relatively consistent ethical code—are usually not completed by the early or even the middle twenties. The emotional developments characteristic of adolescence may be regarded as essentially an orientation of the feelings away from the self and towards other individuals and groups. Willoughby’s definition of emotional maturity as “release from egocentrism, the achievement of socialized impulses, of insight,” seems therefore to be generally justified.²

Emotional maturity is much more influenced by training and circumstances than any other phase of development, and consequently any one or all of the adjustments characteristic of adolescence may be delayed long after the time when physical maturity is reached. Even in cases where the emotional adjustments are relatively complete in adolescence, the new experiences and responsibilities resulting therefrom naturally fall into the period of maturity.

Suppose that an individual succeeds in finding a job or

¹ J. Downey, *The Will-Temperament and Its Testing*, 1924, p. 256

² R. R. Willoughby, “A Scale of Emotional Maturity,” *Journal of Social Psychology*, 1932, p. 4.

entering a profession before the end of the period of youth, and leaves home for the fulfilment of his task. He will still have much to learn concerning his work, and may continue his technical training into maturity, and thus develop new interests and understanding through the practice of his vocation. In his leisure, he may decide to take up new games, hobbies, and forms of recreation, which on account of economic or other circumstances may not have been possible to him earlier in his history. Even if he is fortunate enough to be self-supporting, he will not immediately gain complete psychological independence, but will continue to accept the family views on certain questions. In the majority of cases "vocational" development continues well into maturity—through continued training, through the actual shouldering of more and more responsible work, and through active membership of a Trade Union or professional organization.

The same general principle holds in regard to the second adjustment. A girl may fall in love once or many times during adolescence; but marriage, the making of a home, the gaining of psychological independence of her parents, the adjustment of her behaviour to that of her husband (which may involve much "give and take"), the bearing of children and the fulfilling of the responsibilities of parenthood come later during maturity. Similarly, an individual may become interested in social problems during youth; but it is only in maturity that he or she will be called upon to fulfil the practical responsibilities of citizenship and to take an active and responsible part in local government and in national and international politics.

The third great change characteristic of adolescence is the appearance or intensification of religious emotions, leading to some measure of adjustment to the spiritual universe. Even if this adjustment is relatively complete in youth, and the individual joins some religious organization which suits his particular needs, this is obviously not the end of this line of development.

During maturity, the experiences which crowd in upon an individual through his work and leisure interests, perhaps through falling in love or through parental and other social responsibilities, make further modification of perspective inevitable. For example, the experience of active war service had profound effects on the philosophies and ethical codes not only of unstable adolescents but also of mature men. In some cases it led to a loss of faith in the existence either of God or of any kind of spiritual order. In others it led, apparently, to an "exaltation" of the spirit over the body. In support of this contention, Dorrie quotes the words of a Highland officer, after years of war, who wrote, "Truth is come contenting us, and our eyes are clear."¹ Indeed, it seems that any new experience may contribute something vital to an individual's philosophy.

"Just when we are safest, there's a sunset-touch,
A fancy from a flower-bell, some one's death,
A chorus-ending from Euripides—
And that's enough for fifty hopes and fears
As old and new at once as Nature's self,
To rap and knock and enter in our soul,
Take hands and dance there, a fantastic ring,
Round the ancient idol, on his base again,—
The grand Perhaps!"²

¹ C. O. G. Dorrie, "The Education of the Soldier," *Journal of Adult Education*, September 1927.

² R. Browning, *Bishop Blougram's Apology*.

The experiences of mystics, although no doubt they are in a minority, have been described in many cases in great detail; and the records serve to show how profound may be the developments of spiritual life during maturity. Starbuck has emphasized the "conversions" which take place during adolescence¹; but it is a false simplification to suppose that conversion is solely an "adolescent phenomenon." The history of mystics goes to show that in some cases there are much later conversions, frequently at about 30 years of age. St. Paul, St. Augustine, St. Ignatius, St. Teresa, and Tolstoy, fall into this group. Pascal seems to have experienced two conversions, one at 23 of the usual adolescent kind, and a second mystical conversion at 31.² According to von Hügel, something of this kind is not unusual, for there are two crises of the soul; first when it adds speculation to institutionalism, and second, when it adds mysticism to both.³

Mystical conversion is frequently initiated by sudden illumination, like that of St. Paul on his way to Damascus. Afterwards "an enhanced vitality, a wonderful sense of power and joyful apprehension as towards worlds before ignored or unknown, floods the consciousness. Life is raised to a higher degree of tension than ever before; and therefore to a higher perception of Reality."⁴

Even after conversion, mystics are agreed that there are many stages of growth in the "long viaticum of ascent" before the final stage of Union with God. The three chief stages usually recognized are the purgative life, the illumina-

¹ See pp. 152-3.

² R. H. Thouless, *An Introduction to the Psychology of Religion*, 1923, pp. 207-11.

³ Baron von Hügel, *The Mystical Element in Religion*, 1909, Chap. II.

⁴ E. Underhill, *The Mystic Way*, 1913, p. 50.

tive life, and the unitive life.¹ The first stage necessarily involves self-discipline, for "without holiness no man may see the Lord." It may be long continued. In St. Paul's case, there appear to have been from ten to twelve years of inconspicuous work—a severe discipline for one with his outstanding gifts—between the vision on the way to Damascus and the setting out on his great missionary journeys. In the second stage, the struggle is transferred to the *inner* life; and it is only in the last stage that there is Union or complete harmony with the Divine. As the individual walks the mystic way he experiences not only the "blessed" illumination promised to the "pure in heart," but also the "dark night of the soul." The goal of Union remains ever in the future. Thus St. Paul acknowledges after a long period of work and contemplation, "I count not myself to have apprehended: but this one thing I do, . . . I press toward the mark for the prize of the high calling of God."² Similarly, St. Augustine looks to the future. "My life shall be a real life, being wholly full of Thee."³ The religion of a mystic is not a closed system of fixed beliefs and ritual, but a new series of profound experiences, an adventure after the unattainable, "a lift-up of his nature to new levels of life."

The explanation of mystical conversion suggested by Dr. Thouless is that it is "the redirection of the whole *libido* into the religious sentiment"⁴; in other words, the religious sublimation of the entire instinctive nature. However we may evaluate mysticism, the records of the

¹ W. R. Inge, *Christian Mysticism*, 1899, pp. 9-21.

² Phil. iii, 13, 14.

³ St. Augustine, *Confessions*, Bk. X, Cap. 28

⁴ R. H. Thouless, *An Introduction to the Psychology of Religion*, 1923, p. 213.

experiences of mystics provide ample evidence of the main psychological fact that in the case of this minority of human beings there are developments during maturity which are even greater than any recorded of adolescents. The mind seems to go back again into the melting-pot, and there results a "new creature." Miss Evelyn Underhill describes the true mystic as "the adolescent of the Infinite." "From first to last," she says, "he exhibits all the characteristics of youth; never loses—as that arrested thing the normal adult must—the freshness of his reactions on the world. He has the spontaneity, the responsiveness, the instability of youth; experiences all its struggles and astonishments. He is swept by exalted feeling, is capable of ideal vision and quixotic adventure; there is 'colour in his soul'." ¹

If there were at our disposal detailed records of the experiences of "normal adults" as well as of saints and mystics, it is probable that the majority of them would indicate considerable possibilities of development in perfecting one or more of the three major adjustments begun in the earlier period of adolescence. Some are able to grow in all three directions. Through the intelligent practice of a vocation and the right use of leisure, through the responsibilities of parenthood and/or of citizenship, and through the practice of prayer and worship and the acceptance of some responsibility within a religious organization or, even more fundamental, through real attempts to go forward in the spirit of love, any individual may learn, with increasing age, to live more abundantly. In this case, there will continue to be an enrichment of personality in and through maturity. Old fogeydom may

¹ E. Underhill, *The Mystic Way*, 1913, p. 49.

thus turn out to be merely arrested development, due either to a lack of creative energy within, or to an inappropriate environment without.

An environment is inadequate for an adult if it fails to provide him or her with work, with those opportunities for recreation and education which make a balanced life possible, and with freedom and social and moral responsibility. Plato defined a slave as "one who accepts from another the purposes which control his conduct." It is obvious that this condition may obtain even where there is no slavery in the legal sense ; and, where it exists, it will almost certainly arrest the development of adults forced to live under it.

The adjustments which are characteristic of youth should then be perfected in maturity through a faithful performance of the work of life and the duties of membership of a civilized community. In all cases where this is successfully accomplished, there will result *wisdom*, the fruit of a balanced many-sided development. In a few cases, a new and higher level of life may become possible through adjustment to another order of Reality. Both the practically-minded man of affairs and the mystic, "straining up into the blue," will, however, have a common achievement, if they attain full humanity. They will have learned to put into practice some ethical code. The main difference between them is that the morality of the former tends to be "a closed system" of fixed rules, while that of the latter remains "open," being of the spirit rather than of the letter. This is the inner meaning of the antithesis between the old morality of the law and the commandments, and the Christian principle of love, which can replace and fulfil all the commandments.

“ This is My commandment, That ye love one another, as I have loved you.” ¹

“ God is love ; and he that dwelleth in love dwelleth in God, and God in him.” ²

¹ Gospel according to St. John xv. 12.

² 1 John iv. 16.

CHAPTER XI

VARIETIES OF INDIVIDUALS

“FROM all enumerations of the brethren, from all that reduces them to an average or adds them up into a mass, from all statistics of the saved and lost, from all Government returns of virtue and vice, from all that measures our happiness in solid blocks or weighs it in tons avoirdupois—good Lord, deliver us ; and help us to know each son of man not by his number but by his Name.”¹ In this humanist prayer, Dr. L. P. Jacks expresses a very real fear that the application of scientific methods of enquiry to the study of human beings will tend to level up, or more accurately to level down, their differences, and will consequently veil the rich individualities of which account must be taken in any endeavour towards mutual understanding and fellowship. Such an anxiety is a natural response to the general tendencies of nineteenth-century science which seemed to be “destined to tread the world into a paste and thereof make a smooth uniform mould, whereon to plant its flag.” It is perhaps also justified in respect to the twentieth-century use of statistical methods in the social sciences, and particularly in economics and educational administration. But to the psychologist, the *individual* is the natural unit of study ; and it is therefore not surprising to find that the branch of psychology which is specially concerned with individual differences is already

¹ L. P. Jacks, *From the Human End*, 1918, p. 3.

sufficiently developed to be of the greatest service to education. The truth is that the more psychologists have probed into the behaviour and mental experiences of individuals, the more differences have been revealed and the more the uniqueness of each individual has been emphasized.

Children, especially twins, have sometimes been described as being "as alike as two peas." It is probable that even two peas would not appear to an observer to be alike were it not for the limitations of his unaided powers of perception and his tendency to attend only to that which is likely to be of practical use to him in his life of action. It is only in exceptional circumstances that a man needs to adjust himself to individual peas. Usually, in his ordinary dealings with them—in growing, measuring, selling, buying, cooking, or eating them—he acts on them in the mass, and is therefore only concerned with their average, or common, characteristics of age, size, shape, hardness, or taste. But in adjusting himself to other human beings, his problem from the outset is very different. No two human beings are exactly alike ; and what is more, it will be of the greatest practical use to him to notice the differences that exist, in order to adjust himself more accurately to his fellows and thus to learn to co-operate with them in work and play.

Even the young child quickly learns to notice those differences in the behaviour of the members of his immediate circle which he can most easily exploit. Before he has sufficient command of language to describe their characteristics he will react to them for his own ends. Lying awake in his pram in the garden, he may respond to two sets of footsteps in two quite different ways. Hearing the first, he will remain contentedly quiet ; in response to

the second, he may set up a yell and virtually demand to be taken up. He reacts differently because of past experiences, which have already taught him that in the one case, though not in the other, the expenditure of energy is likely to be worth while. Similarly, men of affairs, whose business it is to control and use the services of many kinds of people, usually develop more than ordinary powers of perceiving individual characteristics; for their success depends largely on their insight in this direction. It is, however, no exaggeration to say that the modern psychologist's use of scientific methods of enquiry has already revealed differences between individuals, hitherto undreamed of by men of affairs or even by novelists or philosophers.

Reference has already been made to certain differences in colour-perception which have been discovered amongst ordinary people.¹ Such differences may be due to peculiarities in the sense-organs and may therefore have a physical basis; but there are equally striking differences in memory, imagination, abstract thought, and in the many other mental processes which have been distinguished. For example, even when the same simple terms in a common language are used by several persons, it does not follow that the accompanying mental processes are identical. There are some individuals who make much use of imagery in thinking; while others seem to proceed more abstractly with few accompanying non-verbal images. Some recall a past experience mainly in terms of sight; others in terms of hearing; and others use much kinæsthetic imagery. It is recorded of Zola, the novelist, that he frequently used a very exceptional method of recall, remembering the past

¹ See Chap. I, pp. 16-7.

largely in terms of smell. Thus the same word, say Autumn, may be used with different shades of meaning by individuals, who can communicate with one another by means of a common language : and to one this meaning may be accompanied by a vivid visual image of red, brown, and yellow autumn colourings ; to another, the recollection of darkening days may lead to a revival of a feeling of depression (an organic image) ; and in a case like Zola's there may be the remembrance of the smells of decaying leaves and damp earth. Some may have several accompanying images ; others may concentrate on the essential meaning of the term, and their thinking in this connexion may be entirely devoid of imagery. Yet there is a modicum of common meaning in their experiences sufficient for the purposes of ordinary communication.

Jaensch and the Marburg School of psychologists have recently subjected to systematic investigation the visual imagery of children,¹ and have been led to recognize the presence in the thinking of some individuals, of *eidetic* visual imagery, which differs from ordinary memory imagery in that it seems to have a pseudo-perceptual character. The eidetic image is localized in space and seems to require the same kind of fixation and eye-movements to get a better look at its details, which is necessary in an actual process of seeing. It is superior in clearness and in richness of detail as compared with the memory image. Some children and most adults are entirely devoid of eidetic imagery, and others have it in a marked degree ; and there appear not only to be age, but also to be racial, differences in regard to the frequency of its occurrence.

¹ H. Klüver, "Eidetic Imagery," *Handbook of Child Psychology*, ed. by Murchison, Chap. XVII.

The most remarkable advances in the study of individual differences in recent years have, however, been due to the use of psychological tests and to the development of methods of measuring different aspects of personality. In the past, although certain types of people have been relatively successful in estimating roughly the mental qualities of their associates, the only serious attempt which has been made to assess objectively the attainments of individuals has been by the unreliable method of examinations. It is fortunately true that examinations are being rapidly improved in at least two directions, both by attempts to eliminate errors arising from differing standards used by different examiners, and also by the checking of results and the counteracting of the effects of difficult papers by the consideration of distribution curves and the use of other refined statistical methods. The fundamental difficulty, however, remains—namely, that even a scientifically conducted examination measures a hotch-potch of factors, which are associated under relatively artificial conditions. The knowledge which the candidate shows himself to possess may be of a most temporary character, and in any case is partly dependent on his environment and on the ways in which he has been taught, and only partly on his own efforts and his intelligence and special abilities. Then his physical constitution, and particularly his liability to fatigue and nerve strain, the precise state of his health at the time of the examination, his powers of concentration and of persistent effort, his fluency in expressing himself in language, and even certain temperamental qualities may affect the result. Environmental conditions, physique (both native and acquired), intelligence, knowledge, special abilities, temperament, and character are all involved ; and

any one of these or any temporary condition affecting the functioning of the individual's mind may skew the result for or against the candidate.

The modern psychologist tries to consider and to measure the various traits separately. He is specially interested in the *inborn* characteristics of the individual, such as his native psycho-physical constitution, his general intelligence and special abilities, and his temperament. These are fundamental to the understanding of his *attainments*—his knowledge, skill, habits, interests, sentiments, and character.

The practical advantage of considering separately the physical, intellectual, and emotional characteristics of individuals must not, however, blind us to the truth that these aspects are actually interwoven and related in the functioning of real persons. We must be on our guard against making the mistake of some American psychologists, who seem to regard intelligence and temperament, and even "motility, self-expression, and sociability," as so many dimensions of a personality, just as the length, breadth, and height are dimensions of a brick. They appear to believe that if only all these qualities could be separately measured, the results in any particular case would define the individual.

The question naturally arises : Are the different aspects of personality usually distinguished independent of one another ? Even the dimensions of a brick cannot be used to define the size without regard to the angular relationship that exists between them. Still less easily can it be assumed that the "dimensions" of personality are independent of one another. Who would venture to affirm that the will-power or the emotionality of an individual does not modify, or give a distinctive flavour to, the functioning of his

intelligence? Surely, the various aspects of a person have to be grasped in their relationship to one another, if a reasonably adequate interpretation is ever to be reached.

The spatial dimensions of a brick, however accurately determined, obviously give no information concerning its non-spatial properties, such as its colour, hardness, or chemical composition. Similarly, the measurement of a person's intelligence or educational attainments, at a particular time, represents the defining of a cross-cut in his personality—important, no doubt, for understanding him, but needing to be supplemented not only by other measurements, but also by an appreciation of the drives and objectives, or, as Adler would term it, the "life-line," of the individual. It is only in relation to the general direction of the individual's life-history that the measurements of his mental traits can be adequately interpreted. "Every psychic phenomenon," says Adler, "if it is to give us any understanding of a person, can only be grasped and understood, if regarded as a preparation for some goal."¹

Obviously, to be successful, the educator needs to obtain a synthetic view of each individual; and to guard at all costs against dogmatizing too soon about anything so intricate and creative as a living person. But this must not be interpreted to mean that the scientific knowledge of individual differences which is slowly accumulating through mental measurements is without significance for education. Improvements both in organization and in methods of education will undoubtedly come in the near future through the increased understanding of individual variations and especially of those differences which seem to determine the educability of individuals.

¹ A. Adler, *The Practice and Theory of Individual Psychology*, 1924, p. 4.

The differences which appear to be fundamental are not those which arise from accidental circumstances, but are differences in native ability and in inherited constitution. Whether a child is born into a rich or poor home, whether he has attended a good or an inferior school, does not determine his power to respond to further educational opportunities. The difficulties which he may encounter through his poor home or school are not insurmountable if only he has sufficient *native* talent, a strong enough desire to reach his goal, and suitable educational opportunities. But if he has some congenital defect of mind or body, which cannot be remedied, then he may fail to respond to his opportunities, however fortunate his outward conditions may be. What is true of the two extremes is true also of the whole range of variations. In endeavouring to psychologize education—that is, to adjust it more exactly to the needs of individuals—it is these native differences which are fundamental and which must therefore be further considered in some detail.

CHAPTER XII

VARIATIONS IN NATIVE CHARACTERISTICS

PHYSIQUE

IN mass feeding and physical training experiments, it is sometimes forgotten that there are different constitutional types that need different conditions for health and efficiency. Whatever may be the average of any kind of physical measurement (such as height, weight, vital capacity) for a particular age, there will of course be wide deviations from that average. Some of these may be due to environmental conditions. For example, Woolley¹ discovered, by means of long-continued and accurate measurements, that children who remain at school from 14 to 18 were superior at each stage to children who went to work at 14—in height, weight, and especially in vital capacity and strength. The differences observed in this case were due apparently to the more appropriate environment, during a growing period, of the one group as compared with the other. There are, however, also native differences, which cannot be regarded as caused by the environment. For example, there are children of stocky build (sometimes called the pyknic type) and there are children who even in health are long and slender (the asthenic type); and these vary in their needs and in their susceptibility to different diseases.

Whether the different constitutional types usually re-

¹ H. T. Woolley, *An Experimental Study of Children*, 1926, Chap. V.

cognized¹ are associated with particular mental qualities or not, is an interesting matter for speculation. Shakespeare makes Julius Cæsar accept the hypothesis of such a relationship :

“ Let me have men about me that are fat ;
Sleek-headed men, and such as sleep o’ nights :
Yond’ Cassius has a lean and hungry look ;
He thinks too much : such men are dangerous.”

Kretschmer’s² work on this question, though highly technical, has a certain general interest. He recorded the physical measurements of a large number of patients in a mental hospital, and he noticed a relationship between the physical type and the particular kind of mental disease from which the patient was suffering. This led him to measure ordinary individuals, and he found evidence of a similar relationship between physique and temperament. For example, on his theory, individuals of the pyknic type tend to be impulsive and sociable, whereas the asthenic are more reflective and less sociable. Such researches are too near their beginning to be of direct use to education, but they serve to remind us that even in “ milk feeding ” schemes it is unwise to assume that children are “ as alike as two peas.” There are constitutional differences which should be respected.

Of all the physical influences studied in recent years the most striking in their effects on mental qualities are the glands of internal secretion. Thyroid insufficiency, for example, produces a particular kind of imbecility, which, it is believed, can be alleviated by the administering of certain glandular extracts. On the other hand, thyroid

¹ See H. A. Harris, *The Primary School*, H.M.S.O., Appendix II, p. 243.

² E. Kretschmer, *Physique and Character*, tr. Sprott, 1925.

excess may heighten emotional reactions, making generally for nervous irritability. Most of the changes characteristic of early adolescence, such as sexual developments, seem to be related to glandular changes. Although there is need for much further research before any high degree of certainty can be assumed, it seems not improbable that individual differences in these impulses are associated with differences in internal secretions.

There are other differences in bodily organization which profoundly affect development and of which account should be taken in educational planning. If an individual is deficient in one or more of the special senses (for example, sight or hearing) his education presents a special problem, namely, that of training some other sense or senses to function as a substitute for the missing one. Even if more than one avenue of sense-experience is closed, as was the case with Helen Keller, who was both blind and deaf, it is still possible for the higher thought-processes to develop, and for the many-sided personality to mature. The work of the educator in devising appropriate methods of teaching when faced with such difficulties was, however, almost as remarkable as the achievement of Helen Keller herself.

In less extreme cases, where sense-organs function imperfectly, it is important that the defect should be discovered, and if possible remedied without delay, so that the individual does not lose valuable opportunities for learning, and—equally important—does not lose confidence in his own powers.

Children who differ seriously from the normal in respect of one sense need special educational provision, not only so that alternative avenues of gaining experience may be widened, but also in order that they may be saved from

developing such feelings of inferiority that irreparable damage may be done to their whole personalities. Any marked inferiority in physique, such as extreme smallness or ugliness, organ inferiority of any kind, or speech defects, may similarly give rise to serious difficulties in the emotional development of the individual. There may arise an inferiority complex, which seeks easy compensations and specious satisfactions, and prevents actual accomplishment by hard work. Curative treatment by a properly qualified psychiatrist may be necessary in such a case, in order that the individual may be enabled to adjust himself to the real world and to utilize fully his educational opportunities.

GENERAL INTELLIGENCE

The native characteristic which most profoundly affects an individual's educability is his general intelligence, or his capacity to solve problems and to deal effectively with new situations. Long before the development of modern methods of measuring intelligence, it was generally recognized that there are children who are clever and quick to learn, while there are others who are stupid and slow; and that there are people who are so inefficient and dull as to need special treatment. In early English legal documents, for example, one type of inefficient who was clearly recognized was the fool "who hath no understanding from his nativity." More recently a Royal Commission defined a feeble-minded person as "one who is incapable, because of mental defect existing from birth or from an early age, (a) of competing on equal terms with his normal fellows, and (b) of managing himself or his affairs with ordinary prudence." The vagueness of this definition has had curious practical results. Experts disagree in regard

to the proportion of the total population who are feeble-minded ; some placing it as high as one in twenty and some as low as one in five hundred.

Binet's early attempts to measure intelligence arose out of this problem, and were undertaken with a view to discovering, by objective methods, the feeble-minded children who needed special treatment. The chief initial difficulty which confronted him was that of finding an appropriate unit of measurement ; and the originality of his solution of this problem was remarkable and has had far-reaching consequences. He conceived of an *age-scale*. With Simon, he devised groups of tests of great variety (including vocabulary, memory, arithmetical and other reasoning, carrying out instructions, definition, and comprehension questions). He tried these in standardized forms on large numbers of children of different ages. If a clear, though not a large, majority of the children of an age-group were able to respond correctly to a test, it was regarded as suitable for that age. In this way, series of tests of increasing difficulty were devised, such that those tests allotted to any age were appropriate for the average child of that age.

The tests were not meant to be tests of knowledge. For example, if an individual is told that Julius Cæsar conducted three military campaigns, on one of which he visited Great Britain, and is then asked " Which was it ? " the question is a test of his knowledge. But if he is told that a man made three journeys to America, on one of which he died, and is then asked " Which was it ? " the question is a test of power to see the point. Intelligence tests are of this second type. They may imply the possession of certain knowledge, but only of that which the average child of the age for which the problem is devised might be

expected to have picked up casually, whatever his educational facilities may have been. In a particular instance, the requisite knowledge may be missing ; and that is why the result of a single test is never regarded as significant in itself. But by the use of a large number of tests Binet believed that this difficulty could be eliminated, and the mental age of the individual could be estimated.

Suppose a child of 8 were examined and succeeded in passing all the tests for 7 and 8 years, together with some assigned to 9, 10, and 11 years. His score might indicate a mental age of 10. His intelligence quotient (I.Q.) would be found by dividing his mental age (10) by his chronological age (8) and expressing the fraction as a percentage (125). It has been discovered that this quotient remains practically constant with increasing age until the maturing of intelligence, and appears to be a fairly accurate measure of the innate general ability of the individual.

The original Binet-Simon tests have been modified, the most important of this type now in use being the Stanford Revision by Terman and the modifications to suit English children by Professor Cyril Burt. Other important developments in intelligence-testing have occurred more recently, such as the use of *performance* tests (where the problems are such that they must be solved in action and not in language) and of *group* tests (where the tests are such that they can be simultaneously administered to a group under examination conditions).

Standardized intelligence tests have now been extensively used to discover the range of variations in native ability which occur in large unselected groups. For example, in America Professor Terman¹ has examined nearly one

¹ L. M. Terman, *The Measurement of Intelligence*, 1919.

thousand boys and girls of various ages by the aid of the Stanford Revision tests. Professor Cyril Burt¹ has measured the intelligence of about three thousand Elementary and Special School children in London and Liverpool. Richardson² has conducted a similar survey of all the children in the town of Blackburn over the age of 6 and under the age of 14, in attendance on a particular day in all Secondary, Elementary and Central, Private and Special Schools in the borough. Professor Godfrey Thomson³ made a survey of more than two thousand 11-year-old children in Northumberland; and more recently (1933) the whole of one age-group (11 years), approximately 100,000 children, throughout Scotland have been surveyed under the direction of the Scottish Council for Research in Education.

This extensive use of standardized intelligence tests has revealed the continuity of variations in intelligence. There are no types, but there is a very wide range of variation without a break, from below 25 per cent. I.Q. to about 180 per cent. It is not a case of clever and dull children, or of defective and normal, but of all degrees of ability from the genius and the very superior to the imbeciles and idiots.

The range of variations in general intelligence has proved to be much wider than would have been expected by the consideration of school achievements. Professor Burt tested his subjects for educational attainments as well as for intelligence. By comparison of the results in the two cases he concluded that, whereas the children slightly below or above the average tend to be drawn by their

¹ C. Burt, *Mental and Scholastic Tests*, 1921.

² C. A. Richardson, "The Growth and Variability of Intelligence," *British Journal of Psychology, Monograph Supplement*, 1933.

³ G. H. Thomson, *British Journal of Psychology*, Vol. XII, pp. 201-22.

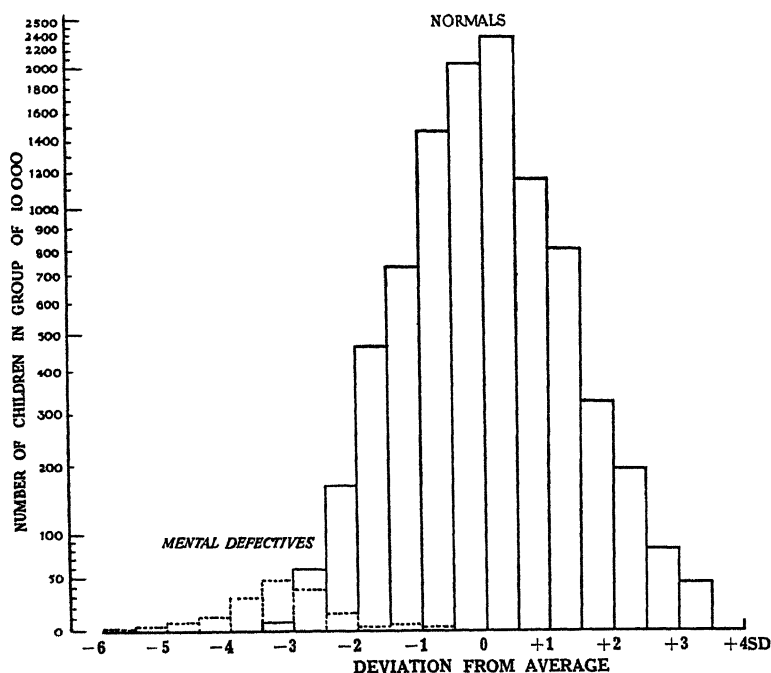


DIAGRAM 4. DISTRIBUTION ACCORDING TO GENERAL INTELLIGENCE OF CHILDREN OF ORDINARY ELEMENTARY AND SPECIAL M.D. SCHOOLS (after Burt).¹

training nearer the average educationally, those who are very much retarded mentally are still more retarded educationally, and those much above the average (I.Q. over 115) are deprived by their training of more than one-half their advancement educationally.²

The existing educational system in this country is, then, very imperfectly adjusted to meet the needs of the great

¹ Reproduced by permission of Dr. Cyril Burt from *Mental and Scholastic Tests* (P. S. King & Son, Ltd.).

² C. Burt, *Mental and Scholastic Tests*, 1921, pp. 176-8.

variety of native ability indicated in intelligence surveys. In particular, the problem of the education of children of high intellectual ability has not yet received adequate consideration. It may be argued that to make these superior children go slowly is good for them physically. Recent scientific researches, however, go to show that mentally superior children tend also to be superior in physique. Baldwin and Terman and Hollingworth¹ found that highly gifted children were on an average taller, heavier, had larger heads (though only in proportion to their greater size of body), greater strength, and more than average health, and were slightly more advanced as regards anatomical and physiological maturity at an earlier age than the average. As a class, mentally superior children do not need the special protection advocated, though, of course, there are individual exceptions. They do need to have to face difficulties and to be sometimes at full stretch. The primrose path along which they are encouraged to walk, under the present organization of education, is more likely to lead to character disaster than to the goal of wisdom, which comes from a balanced many-sided development.

It should be noticed that the wide range of variations in I.Q.s constitutes a more serious educational problem as children grow older. Excluding mentally defective children, the range of variations likely to be met with in ordinary schools might be regarded as extending from about 66 per cent. to over 140 per cent. For a group of children of chronological age 6, this means that training has to be adjusted to a range of *mental* ages from 4 to 8 or 9 (that is, four or five "annual" grades). When these same children reach 12 years of age, assuming that their I.Q.s remain

¹ L. S. Hollingworth, *Gifted Children*, 1926, Chap. IV.

constant, the range of mental ages to be provided for will have increased to eight or nine "annual" grades (that is, there may be children of the *mental age* of 8, 9, 10, 11, 12, 13, 14, 15, and 16 years among the 12-year-olds).

SPECIAL ABILITIES

There are certain special abilities which do not appear to correlate closely with general intelligence. They may be found in high degree with almost any level of general intelligence. The chief of these are musical ability, representative drawing, and mechanical ability.

Seashore has made a detailed investigation of musical talent and has standardized scales for measuring sensitivity to pitch, intensity, time, consonance and rhythm, and tonal memory.¹ These elements seem to be independent variables, the outstanding musician apparently combining them in high degrees of excellence. Although musical ability is thus highly specialized, it is very doubtful whether real distinction in music can be attained by individuals of low general intelligence.

Similarly, ability in representative drawing seems to be independent of general intelligence, and many illustrations could be given where the attempts of highly intelligent individuals, even of University professors, to reproduce an object on paper compare unfavourably with the products of individuals of low intelligence and even of mental defectives.²

Stenquist³ has found by using tests of ability to put together parts of simple mechanisms (such as a mouse-trap

¹ C. E. Seashore, *The Psychology of Musical Talent*, 1919.

² For illustrations, see Hollingworth, *Gifted Children*, 1926, pp. 208-9.

³ J. L. Stenquist, *Assembling Tests*, 1921.

or an electric bell) that there is no close connexion between success in such tests and general intelligence. The ability to assemble simple mechanisms is by no means always found in large measure in bright children, while dull children sometimes succeed well at it.

The importance of discovering and training such special abilities is surely obvious, for if there is one thing that a child can do supremely well or very much better than it can do anything else, its recognition may be absolutely necessary in encouraging self-respect and may therefore be crucial to the child's general education. It is very doubtful whether in existing methods of selecting children for continued education we have sufficiently recognized these special abilities.

TEMPERAMENT

Physique, intelligence, and special abilities are not the only native characteristics which contribute to an individual's success or failure, either in school or in life. Persistency, strength of will, power of work or enthusiasm for a cause may enable one individual to achieve more than another of greater intelligence but with more serious temperamental defects.

For the sake of clearness, temperament should be distinguished from character, just as intelligence was distinguished from educational attainments. Temperament is usually regarded as the *innate* constitution of the feelings, and conational drives, whereas character is acquired, the result of the individual's own efforts and of the training which he has received. The classical division of temperaments into sanguine, melancholic, choleric, and phlegmatic, did not refer to qualities for which the individual could be

held responsible, but to inborn differences—the bases on which character had to be built.

As might be expected, the methods of diagnosing temperaments are at present in a much more experimental stage than the methods of measuring intelligence. Professor June Downey¹ has invented handwriting tests which she claims indicate will-temperament. There are three groups of tests, each consisting of four tests. The first group measures ease and fluency of reaction; the second, force of reaction or resistance to opposition; and the third, precision and carefulness of reaction. Graphs or will-profiles, plotted on the basis of these tests, and of which illustrations are given in diagrams 5, 6, and 7, indicate three chief characteristic patterns—namely, the ready flexible type (diagram 5), the wilful aggressive type (diagram 6), and the deliberate type (diagram 7). The total scores are also significant, leaders and eminent persons apparently having high totals.

By testing entrance scholarship examination candidates with the Downey tests as well as with Intelligence tests, and comparing the results with achievements in written examinations, Dr. D. W. Oates² has shown that there is a closer correlation between success in written examinations and the scores in the Will-temperament tests than in the Intelligence tests. This suggests that, as might have been expected, the qualities tested by Downey, such as perseverance, freedom from inertia, and control are important factors in school achievement.

Dr. Edward Webb has shown from his systematic in-

¹ J. Downey, *The Will-Temperament and Its Testing*, 1923.

² D. W. Oates, "Predicting School Achievement," *Journal of Education*, August 1929, and "The Relation of Temperament and Intelligence to Scholastic Ability," *The Forum of Education*, November 1929.

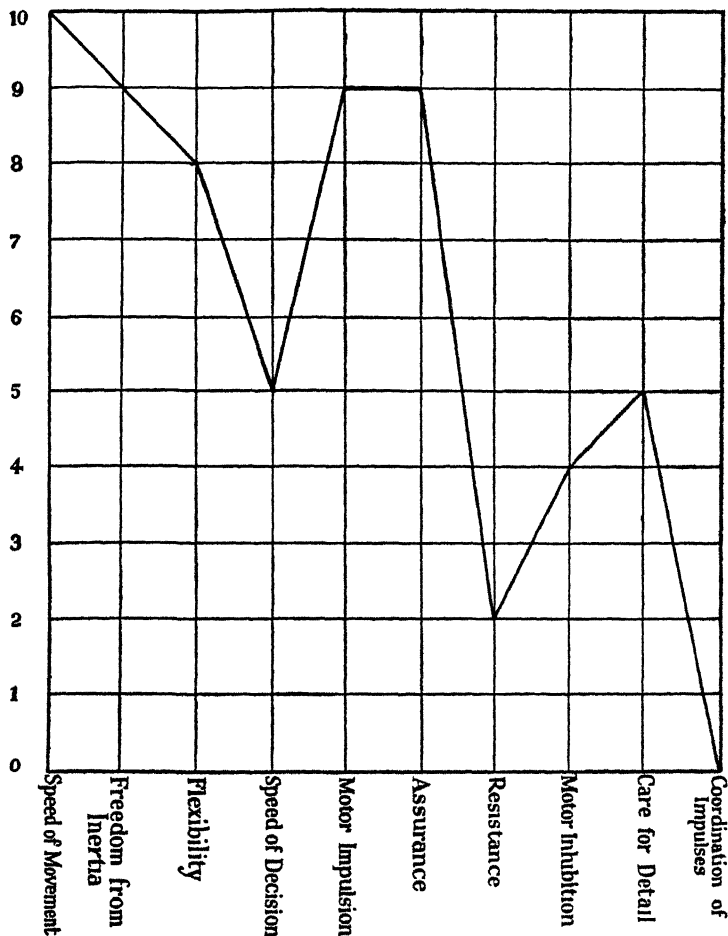


DIAGRAM 5. WILL-PROFILE I.

Reproduced from Professor June E. Downey's "The Will Temperament and Its Testing," by permission of the World Book Company, Yonkers-on-Hudson, New York, and Messrs. George G. Harrap & Co., Ltd.

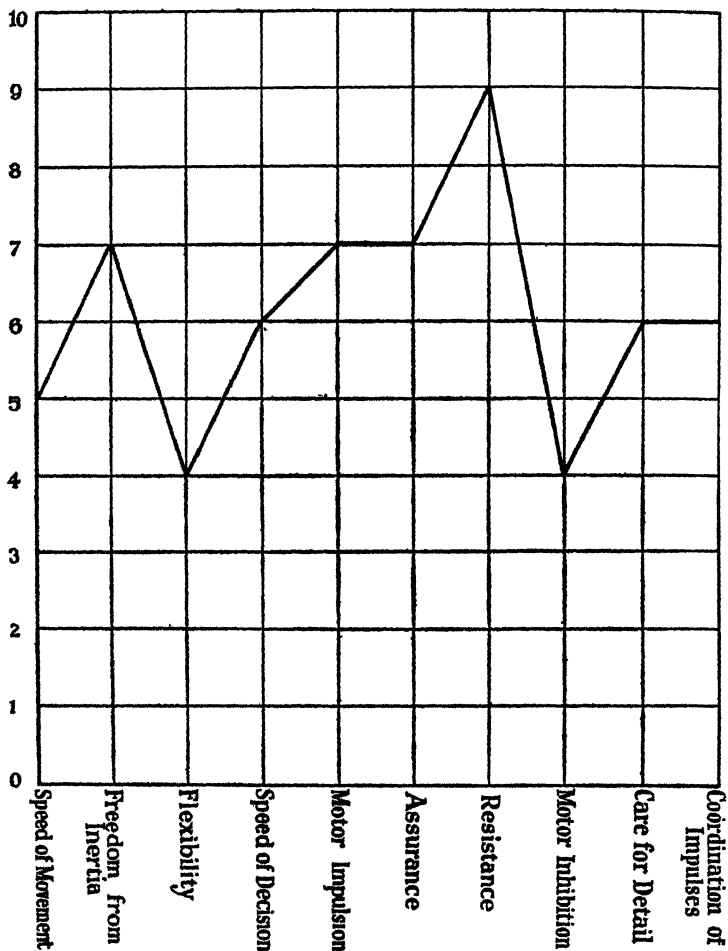


DIAGRAM 6. WILL-PROFILE II.

Reproduced from Professor June E. Downey's "The Will Temperament and Its Testing," by permission of the World Book Company, Yonkers-on-Hudson, New York, and Messrs. George G. Harrap & Co., Ltd.

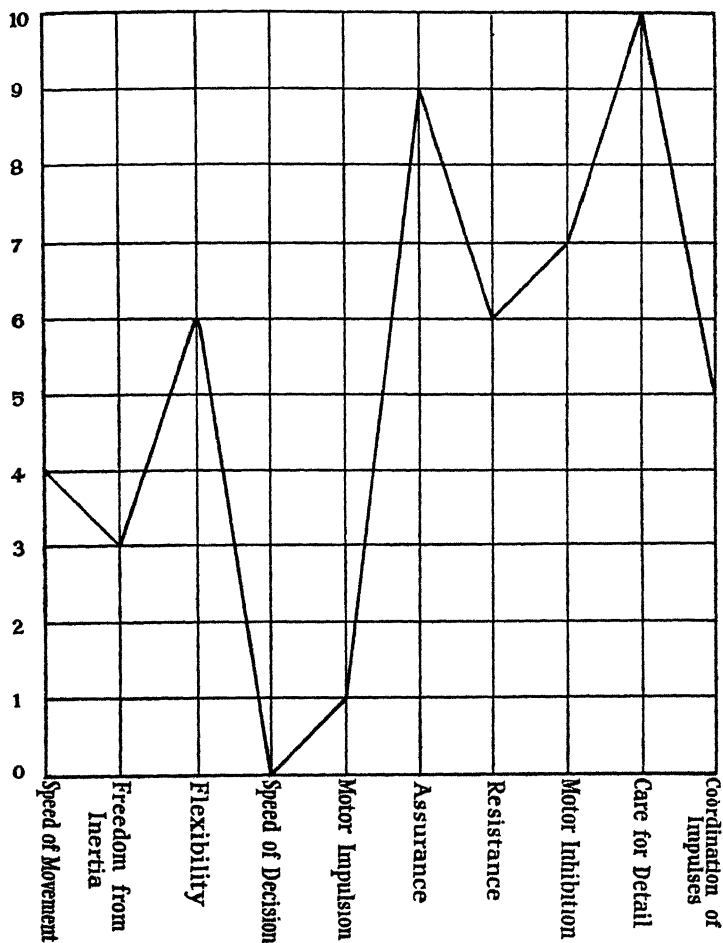


DIAGRAM 7. WILL-PROFILE III.

Reproduced from Professor June E. Downey's "The Will Temperament and Its Testing," by permission of the World Book Company, Yonkers-on-Hudson, New York, and Messrs. George G. Harrap & Co., Ltd.

vestigation and comparison of Intelligence and Character that it is highly probable that there is a *general* factor on the side of character just as there is on the side of intellect. In his view "its nature is best conceived to be in some close relation to persistence of motives ; that is, to depend upon the consistency of action resulting from deliberate volition, that is, from will."¹ If this general factor exists, it might be expected to influence achievement just as much as, if not more than, native intellectual ability ; and on this account the efforts to measure it are likely to be of great practical importance in the future.

Jüng² has used with success the method of "free association" to indicate temperamental differences. The subject is asked to respond to each of a series of words by free association. Two chief types of response-words can be readily distinguished, namely, objective, and egocentric (including predicate) responses. For example, if the stimulus "apple" was associated with "tart," the response would be regarded as objective ; but if it suggested "forbidden," the response would be egocentric. The proportion of the two types in a large enough number of cases of free associations is significant. Jüng found that a high percentage of objective responses indicated the extrovert temperament, whereas a high proportion of egocentric responses was common to introverts. There are many gradations in between. The two chief kinds of temperament thus distinguished, namely, extroverts and introverts, correspond roughly to the types distinguished by Kretschmer.

¹ E. Webb, "Character and Intelligence," *British Journal of Psychology, Monograph Supplement*, Vol. I.

² C. G. Jung, *Studies in Word Association*, 1919.

The scientific investigation of temperament variations is necessarily so tentative at present that description and rating methods are probably still preferable for practical purposes. In advising individuals concerning their education or in giving them vocational guidance, Professor Cyril Burt advocates assessing the temperamental qualities by interview and description and not by measurement. In its vocational-guidance work the National Institute of Industrial Psychology follows this plan. While the examination of each individual includes a test of general intelligence and also tests of other abilities, temperamental tendencies are studied in a systematic interview, and such qualities as sociability, sympathy, self-confidence, aggressiveness, leadership, carefulness, perseverance, and general stability are rated by the interviewer. Then, "having tested all that he can test, having measured all measurable capacities, having passed in review all available data, the psychologist must bring his mixed materials together in one synoptic survey."¹ This is being increasingly done by the use of "psychographic profiles."

In the diagnosis of an individual it is difficult to isolate inborn and acquired characteristics, and obviously both will need to be taken into account in any attempts to aid personal development. But it is the native differences which need to be specially considered in solving problems of educational provision and organization. For example, a child may lag behind in scholastic achievements, and this backwardness may be due to illness or absence from school from other causes, poor training, or frequent changes of school. With care and patience on the part of the teacher,

¹ C. Burt, "The Mental Differences between Individuals," *British Association Report*, 1923.

and with the co-operation of the child and his parents, there is no reason why this "acquired backwardness" should not disappear. But if a child's backwardness is due to native defect, if he has a low level of intelligence—though not so low as to classify him as mentally defective—there is need for the adjustment of the educational curriculum and methods to suit his case. There is need for special provision for children of his kind (I.Q. 70 to 80), so that they may enjoy the exercise of such powers as they possess and have a fair chance of balanced development. The scientific study of such variations in native abilities is certain, in the near future, to lead to further differentiation of provision for education, and therefore to the more exact adjustment of training to the basic needs of individuals.

CHAPTER XIII

RESEMBLANCES AND DIFFERENCES BETWEEN THE SEXES

IF education should be adjusted to meet the needs of individuals for whom provision has to be made, and if increased differentiation is indicated by the study of variations in native abilities, the question of resemblances and differences between the sexes assumes considerable practical importance. Are there such differences between boys and girls, especially in adolescence and subsequently, as to justify the view that they are better educated separately and differently? Or do modern scientific studies of sex-variations point to co-education as the most desirable solution of the problem?

There are certain obvious difficulties that have to be faced in attempting to review the evidence now available concerning resemblances and differences between the sexes. In the first place, since the reviewer belongs either to the one sex or to the other, it is extremely difficult for him or her to be unprejudiced. It is only by concentrating on data derived from the use of objective methods of measurement that he or she can be certain of maintaining an unprejudiced approach. In the second place, when differences are discovered, it is often extremely difficult to decide whether they are native and fundamental, or the result of the different upbringing and ideals of training of the two sexes. It is of course the innate constitutional differences

that are important for education, and it will therefore be necessary to concentrate on them in this enquiry.

PHYSIQUE

A comparison of the average death-rates of the two sexes shows that at all ages the expectation of life of girls and women is slightly higher than that for boys and men.¹ Before puberty the physical differences between boys and girls are relatively slight, apart from this and the nature of their sex-organs. Girls of a given chronological age are on an average slightly more advanced in ossification than boys of the same age.² They are also believed to be precocious in regard to growth of brain,³ but in average height and weight the differences are slight. According to the data collected by the British Association and also by Greenwood, boys are slightly heavier and taller than girls from 5 to 10; then girls grow more rapidly than boys, and from 12 to 14 are actually taller, and from 12 to 15 are heavier on an average. From 15, boys again take the lead, and by 18 they are very superior. Similar generalizations can be deduced from B. T. Baldwin's measurements.⁴

The springing-up of early adolescence appears to occur earlier in the case of girls than of boys; and growth ceases at an earlier age. After the characteristic changes of the period, the sex-differences in physical measurements are sufficiently large to be of importance. On an average, boys are heavier and taller, more muscular, and have greater strength and vital capacity. According to Woolley's

¹ *Statistical Abstract*, H.M.S.O., 1935, Tables 25 and 26.

² B. T. Baldwin, *The Physical Growth of Children*, 1921, Part III, Chap. VII.

³ H. A. Harris, *The Primary School*, Appendix II, p. 238.

⁴ See Table I, Chap. VI, p. 95.

measurements,¹ they are also superior in steadiness and rapidity of movement, and in all the physical abilities measured by her except complex processes demanding rapid eye-hand co-ordination, such as card-sorting. In this, girls showed superiority.

Girls are heavier relatively to their height, and their sitting height is greater in proportion to their total height ; but other indices, such as vital capacity, chest-girth, strength of arms and upper back in relation to height, are greater for boys than girls.² These differences in proportion suggest a different emphasis on muscular activity, man having better motor mechanisms on the average, and woman apparently having more reserves of energy in regard to vegetative functions.

In the important appendix ³ to the *Report on Differentiation of Curricula between the Sexes in Secondary Schools*, the late Dr. J. G. Adami reviewed the chief physical differences between boys and girls, and pointed out that after, though not before, the pubertal changes, the analysis of the blood is different in the two sexes. The blood of men contains less water and more red corpuscles and has a higher specific gravity than the blood of women. On an average, during and after adolescence, girls are nearer to the threshold of anæmia than boys. The secondary sexual characteristics, which are different, also become more manifest.

Notwithstanding this, " minute microscopic study of the various organs in the two sexes (the essential organs of sex being excepted) demonstrates that the differences are

¹ H. T. Woolley, *An Experimental Study of Children*, 1926.

² B. T. Baldwin, *The Physical Growth of Children*, Table XXXIII.

³ *Report on Differentiation of the Curricula between the Sexes in Secondary Schools*, H.M.S.O., Appendix V, 1923, p. 180.

quantitative, not *qualitative*.”¹ Adami thought it probable that the average brain of the males of any branch of the human race is larger than the average brain of the females of that branch. This greater average size of brain is, however, associated with the larger size of body. According to Ellis,² it is not relatively larger, women having a slightly heavier brain in proportion to body-weight than men. Perhaps in our present state of ignorance, the only conclusion that is justified is the negative one reached by Adami “that we are not in a position to decide from anatomical considerations that the average male is potentially more intellectual than the average female.”³

It is frequently stated that, whereas the male sex is superior in regard to strength and accuracy of simple movements, the female sex is superior in regard to the functioning of the senses. It is difficult, however, to discover *experimental* investigations which give consistent results. Thus, for example, while Burt and Moore⁴ tested English school children for discrimination in pitch and found girls definitely superior to boys in this respect, Seashore,⁵ using carefully standardized tests in America, found that “pitch discrimination does not vary in any constant manner with sex.” The only differences in regard to sense-discrimination, about which there is general agreement among careful investigators, appear to be in the

¹ *Report on Differentiation of the Curricula between the Sexes in Secondary Schools*, H.M.S.O., Appendix V, 1923, p. 180.

² R. S. Ellis, *The Psychology of Individual Differences*, 1928, Chap. X.

³ *Report on Differentiation of the Curricula between the Sexes in Secondary Schools*, H.M.S.O., Appendix V, 1923, p. 180.

⁴ C. Burt and R. C. Moore, “The Mental Differences between the Sexes,” *Journal of Experimental Psychology*, 1912.

⁵ C. E. Seashore, “The Measurement of Pitch Discrimination,” *Psychological Monograph*, University of Iowa Studies, 1910.

perception of colour and in the sensitivity to touch (æsthesiometric index). In both these, girls and women show some superiority over the opposite sex. There are proportionately more boys and men who are colour-blind than girls and women. Whipple,¹ for example, places the proportion as high as 4 per cent. of men and less than .5 per cent. of women.

There is also a greater liability to speech-defects among boys than girls. Boys are not only more apt to stutter, but are also more likely to persist in the maladjustment. According to Travis,² the ratio of boys to girls among stutterers increases with age from 2 : 1 to 10 : 1. Whether this difference between the sexes is due to a superiority of the female sex in intricate sensory-motor co-ordinations, as might be suggested by the card-sorting test results, or is the result of emotional differences, in either case the stutterer cannot be regarded as a sex-type. The one girl who stutters needs as much careful study and treatment as any one of the ten boys. Her peculiarity cannot be ignored because it is more usual to find it in the other sex. This is self-evident in the case of a defect like stuttering. The general principle is, however, sometimes overlooked; namely, that remedial treatment and educational facilities alike should be adjusted to each individual, whatever his or her sex, and not to sex-types, which clearly are artificial abstractions.

GENERAL INTELLIGENCE

In former days the superiority of boys over girls in regard to general intellectual ability was usually taken for

¹ G. M. Whipple, *Manual of Mental and Physical Tests*, Vol. I, p. 188.

² L. E. Travis, *Speech Pathology*, 1931.

granted. The recent development of objective methods of measuring general intelligence has now provided a standard by which to compare the native abilities of boys and girls at different ages. Surveys have been made of large unselected groups of children, and the data collected have been used to compare the general intelligence of the two sexes.

For example, Terman¹ found the I.Q.s of nearly a thousand boys and girls in America, and by comparison concluded that on an average girls were slightly superior from 5 to 13 years. "As far as the evidence of mental tests can be trusted," he says, "the average intelligence of women and girls is as high as that of men and boys."

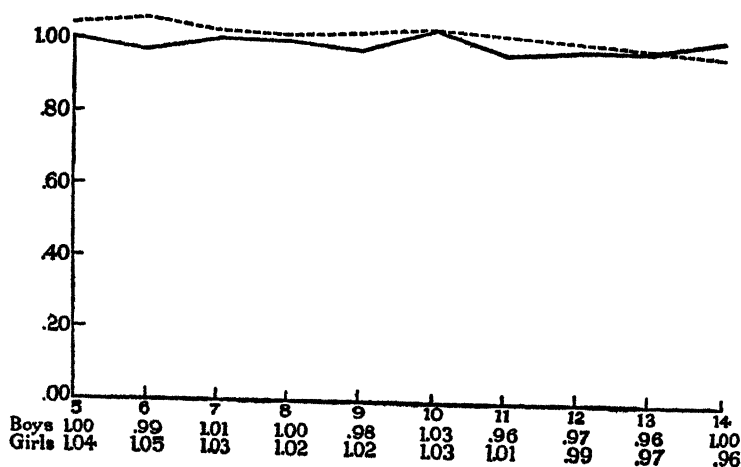


DIAGRAM 8. MEDIAN I.Q. OF BOYS (UNBROKEN LINE) AND GIRLS (DOTTED LINE) (after L. M. Terman).²

¹ L. M. Terman, *The Measurement of Intelligence*, p. 69.

² Reproduced from Professor L. M. Terman's *The Measurement of Intelligence*, by permission of the Houghton Mifflin Company and Messrs. George G. Harrap & Co., Ltd.

In his survey of about three thousand English children, Professor Cyril Burt also found that the average mental age of girls of all years between 3 and 14, except 10, was slightly higher than that of boys of corresponding ages. The results recorded by him are contained in the following Table:

TABLE III. AVERAGE MENTAL AGES OF BOYS AND GIRLS.

Chronological Age.	Average Mental Age.	
	Boys.	Girls.
3 . . .	3·2	3·8
4 . . .	4·5	4·7
5 . . .	5·3	5·7
6 . . .	6·2	6·8
7 . . .	7·3	7·8
8 . . .	8·4	8·7
9 . . .	9·2	9·6
10 . . .	10·7	10·4
11 . . .	11·4	11·5
12 . . .	12	12·4
13 . . .	12·9	13·3
14 . . .	13·5	14·2

From these results he concludes that it is the "feminine sex which is the superior sex, if any, in the Binet tests."² It will be observed, however, that the differences are very slight in comparison with the differences found between the superior and inferior members of the same sex. For example, whereas the difference between the average mental age of the two sexes at 12 is only ·4 years, within each sex there is a range of variation of I.Q.s from 25 per cent. to above 140 per cent. and of mental ages from 3 to 16 years.

The question naturally arises: Is there any significant difference between the sexes in *range* of variations or in the distribution of cases round the average? It is conceivable that although the *average* I.Q. may be practically equal for the two sexes at each age, there may be a greater range of

¹ C. Burt, *Mental and Scholastic Tests*, 1921, p. 193.

² *Ibid.*, p. 197.

variation from the average in one case than the other. The facts that have so far accumulated give no support to the view that the *range* of ability is different, though there is strong evidence for the view that more of the girls than the boys tend to cluster round the average. The superior girls are as good as the superior boys, and the inferior as bad; but there are proportionately more boys found at the two extremes. Thus Terman's census of specially gifted children yielded the result that there were 115 boys with I.Q.s of over 140 per cent. for every 100 girls, though the three highest scores obtained by him and indicating I.Q.s of over 190 per cent. were made by girls.¹ Dr. E. O. Lewis's survey of mental deficiency also indicated a higher proportion of defectives among boys and men than among girls and women.² Similarly, the recent Scottish Mental Survey confirmed the view "that the intelligence quotients of the boys were more widely scattered than the intelligence quotients of the girls."³

Dr. Helen Thompson's investigation of the abilities of a group of University students yielded a similar result in respect to the higher thought-processes. There was practically no difference in the *average* scores of the men and women, nor in the *range* of variations; but proportionately more of the men than of the women had very high or very low scores in the tests, and proportionately more of the women were found near the average.⁴

Both Terman and Burt used revisions of the Binet-Simon scale for measuring the intelligence of their subjects;

¹ L. S. Hollingworth, *Gifted Children*, 1926, pp. 67-8.

² *Report of the Mental Deficiency Committee*, H.M.S.O., 1929, p. 87.

³ *The Intelligence of Scottish Children*, Scottish Council for Research in Education, 1933, p. 122.

⁴ H. Thompson, *The Mental Traits of Sex*, 1903.

and they noticed certain differences in the scoring of boys and girls in the separate tests, which are very different in kind from one another. Although there were many exceptions the boys on an average obtained higher scores in the arithmetical reasoning and in definition tests, whereas the girls excelled in vocabulary tests, æsthetic judgment, and comprehension questions. Burt therefore concluded that while girls excel in tests of a linguistic type, boys excel in tests of a perceptual or motor type¹: and Terman, that girls usually excel in memory and imitation, while boys usually excel in reasoning.²

This analysis of the scores of boys and girls suggests the advisability of considering whether the scales used, which were conditioned by language, favoured either sex. Assuming that girls have slightly superior linguistic ability, as Burt suggests, then the Binet-Simon scale used may have given them an advantage and this would account for their slight general superiority. It would be interesting to compare the results obtained by boys and girls when tested by non-language or performance intelligence tests. In a recent study in vocational guidance carried out by the Industrial Fatigue Research Board and the National Institute of Industrial Psychology, a series of fourteen such tests were used on boys and girls, though not with this object in view. Unfortunately the numbers tested (48 girls and 52 boys) are too small to justify any certain conclusion, but it was found that "although the mental ratio obtained by combining these tests is almost the same for boys and girls, in the separate tests the sex-differences are sometimes well-marked."³

¹ C. Burt, *Mental and Scholastic Tests*, 1921, p. 196.

² L. M. Terman, *The Measurement of Intelligence*, 1919, p. 71.

³ *Report No. 33*, Industrial Fatigue Research Board, H.M.S.O., 1926, p. 27.

The general conclusion which seems to be justified is that on the combined results of Binet-Simon and Performance tests, the two sexes appear to be practically equal in general intelligence. Where sex-differences are indicated in particular kinds of tests, they are very small in comparison with the differences found between the superior and the inferior members of the same sex.

SPECIAL ABILITIES

There is general agreement among investigators that in regard to one special ability, namely, mechanical ability, there is a fairly well-marked sex-difference. Dr. M. MacFarlane tested a number of London school children with constructional tests.¹ For example, they were provided with a number of parts which could be assembled into a wheelbarrow. The boys showed a marked superiority over the girls in solving this problem. Even when the puzzle was that of making a cradle out of parts, the boys maintained a superiority, though in this case it was less marked than in the first test.

Similar results have been obtained by the use of the Stenquist assembling tests, where parts have to be put together to make simple mechanisms. In an investigation of this kind carried out by the Industrial Fatigue Research Board and the National Institute of Industrial Psychology² the percentage of boys who obtained a score in excess of the girls' mean score was found to be 78.8. The Kelly tests of constructional ability, which leave the individual free to build anything he or she pleases out of wooden

¹ M. MacFarlane, "A Study of Practical Ability," *British Journal of Psychology, Monograph Supplement*, Vol. III, viii.

² See *Report No. 33*, p. 41.

blocks and pegs, yielded similar results; the percentage of boys above the girls' mean score being 65.5. The general conclusion is drawn that boys are usually superior in all types of construction puzzles and mechanical-ingenuity tests.

On the other hand, there is general agreement among testers that girls are usually better than boys in linguistic tests. This is not only true of vocabulary, but also of tests of logical association expressed in language, such as associations by opposites, cause and effect, and analogies. One interesting linguistic test used in the investigation of the Industrial Fatigue Research Board,¹ to which reference has already been made, was a Prediction test. The subjects were asked to predict what might happen if certain things were changed. For example, they were given five minutes to write down as many and as different predictions as possible in answer to questions, such as, "What might happen if nobody had any teeth?" "How might our life be different from what it is now, if reading and writing had never been invented?" The scores of the girls were markedly superior to those of the boys in this test, 75 per cent. of them being above the median score of the boys.

It is impossible to say how far these differences are due to innate tendencies and how far to differences in training. The boy is expected to play with his Meccano set while his sister reads her book. But the contrast revealed by the two groups of tests is sufficiently marked to indicate a real difference of interest in the two sexes, though there will always be exceptions in individual cases.

The data regarding differences in ability collected by the use of objective tests would seem then to justify the

¹ *Report No. 33*, p. 45.

conclusion reached by Professor Thorndike that "the most important characteristic of these differences between the sexes is their small amount. The individual differences within one sex so enormously outweigh the differences between the sexes in these intellectual and semi-intellectual traits that for practical purposes the sex-difference may be disregarded."¹

TEMPERAMENT

What then accounts for the significant differences in achievement between the two sexes? Fair-minded observers will agree that up to the present there have been many more men than women in the front rank of inventors, explorers, financiers, and administrators; poets, artists, musicians, scientists, and philosophers. Is this contrast in achievement due entirely to different traditions and opportunities, or does it arise from a more fundamental difference in constitution and function? It has already been pointed out that will-temperament factors play an important part in an individual's achievement, whether in school or in later life²; and it is a hypothesis, at least worthy of consideration, that emotional differences lie at the root of the divergent interests of the two sexes and account for the difference in their average achievements.

The methods of measuring will-temperament are still in their infancy; and the task of estimating emotional differences between the sexes is at present extremely hazardous. Any conclusions drawn must therefore be regarded as merely tentative.

In infancy there is evidence of a slight difference.

¹ E. L. Thorndike, *Educational Psychology*, 1914, p. 184.

² See pp. 192-6.

Bridges,¹ following Gesell, has devised and used norms for comparing the social and emotional development of very young children. Although the numbers examined by her with the aid of the rating scale are too few to justify any certain conclusions, she has noticed that the girls on an average scored better than the boys on the "relations with other children" section of the scale. They also appeared to be less readily angered and excited than boys of the same age, and were less cheerful (that is, were more frequently distressed). This comparison suggests that there may be a tendency to a slight difference of emphasis on the active (sthenic) and passive (asthenic) groups of emotions; the boys more frequently experiencing anger, elation, and the other sthenic emotions; and the girls, distress, subjection, and the other asthenic emotions.

Eng has tried to investigate the emotional life of older children, and of adults, by recording the changes which occur in the pulse, volume of arm, and respiratory system, under different conditions. He found that the children (10 to 12) were more inclined to "psychical activity coloured by pleasure" than the adults (19 to 25). He noticed more cases of depression among the women, and more of annoyance and excitement among the men; but did not discover a similar difference of emphasis on the sthenic and asthenic emotions in the boys and girls.² At this stage both sexes were apparently equally cheerful and care-free.

It is during and after adolescence that emotional differences between the sexes, if they exist, are likely to be more marked. There can be no doubt that associated with the

¹ K. M. B. Bridges, *The Social and Emotional Life of the Pre-School Child*, 1931.

² H. Eng, *The Emotional Life of the Child*, tr. L. Morrison, 1925, p. 108.

earlier physical maturity of the feminine sex, there is a correspondingly earlier emotional maturity. The characteristic emotional developments, the rise or intensification of interest in the opposite sex, and the deepening of social, æsthetic and religious emotions, occur slightly earlier in the case of girls than of boys. It is commonly believed that after these changes have taken place girls have on an average a slightly higher general emotionality than boys ; but it is difficult to discover any objective evidence, collected by reliable investigators, in support of this view.

Apart from the earlier emotional maturity of the girl, the most striking difference between the sexes is probably a difference in emphasis on the active and passive groups of emotions. Professor Cyril Burt's¹ investigations into the causes of juvenile delinquency and his classification of juvenile "crimes" show that the emotions that most easily get out of control in the case of boys are the aggressive ones (such as anger, elation, and the pleasure of acquisition) ; whereas, in the case of girls, they tend to be the passive ones, giving rise to misdemeanours such as lying, sex offences, and attempted suicide. Further, there are about four times as many male criminals as female ; and as it is usually failure to control the sthenic emotions which leads to criminal offences, the conclusion can be regarded as established, namely, that these emotions are more pronounced in the male. What is true of delinquents seems also to be true of normal adolescents, for statistics collected by the questionnaire method revealed the probability that proportionately more women and girls than men and boys tend to emphasize the asthenic emotions, and proportion-

¹ C. Burt, *The Young Delinquent*, 1925, pp. 15-16.

ately more indulge in systematic daydreams, especially of the romantic type.¹

Another line of evidence that supports the view that the sthenic emotions tend to be emphasized in the boys and the asthenic in the girls is contained in the diaries and literary productions of adolescents, collected and studied by Oskar Kupky.² The religious poems of the girls are marked by an attitude of prayer and dependence: there is no parallel among them to the attitude of titanic aggression found among some of the boys, and expressed, for example, in the following poem written by a lad of 18:

"Come, let us live
Free of the Godhood,
Free of religion.
We are almighty,
We shall live always
In spite of the Lord God."³

The larger proportion of girls who indulge in daydreams during adolescence suggests a greater liability to conflict, and more difficulties in adjustment to the real world, than is the case with boys. It has also been found that women greatly exceed men in the number of emotional inhibitions revealed in word-association tests; and that they tend to give a higher proportion of predicate (introvert) responses in such tests.⁴ These differences indicate a greater liability to conflict, which may perhaps be traced back to a fundamental difference in the activity of the sex-impulse in the two sexes. In woman, the sexual emotion is in a sense passive, and tends to conflict with egoistic impulses. In

¹ O. A. Wheeler, *Youth*, 1929, pp. 86-7.

² O. Kupky, *The Religious Development of Adolescents*, 1928.

³ O. Kupky, quoted from *Giese*, No. 192.

⁴ See p. 196, F. H. Allport, *Social Psychology*, 1924, p. 346.

man, the sex-impulse tends to reinforce the egoistic trends. It is this difference which probably accounts for the outstanding differences in achievement between many men and women of equal intellectual gifts. Although there will always be exceptions, unusual ability is more frequently associated with great persistence of motive in men, than in women. Relatively fewer women have the temperament for continued achievement in one direction. They are more inclined to sacrifice their own ambitions to other people's needs and demands.

GENERAL CONCLUSIONS

The physical differences between boys and girls are sufficiently marked to make it desirable that the problem of their physical education should be separately studied and solved. The earlier pubertal changes in the case of girls also suggest the advisability of avoiding over-pressure in the period of most rapid development, from 11 or 12 to 15 or 16. On this account there is a strong case for a shorter working-week in the Secondary School for girls and for a consequent delaying of the First School-Leaving Certificate Examination for an additional year, as compared with boys.

The differences in intellectual ability between the sexes are too slight to have any practical significance. It is fundamentally important that the full range of variations in general intelligence and special abilities should be catered for in the educational provision for both sexes. Education should always be adjusted to the needs of *individuals*, and not to artificially constructed and non-existent sex or other *types*.

Sex-differences are probably greatest in the region of

emotional and temperamental characteristics ; but this fact constitutes no valid argument for denying to any girl opportunities for the full and free development of her intellectual powers. Whether she eventually solves her temperamental difficulties, supposing that they exist, by entering a profession or by sacrificing her professional ambitions for marriage and motherhood, in either case it will be true that she can only hope to reach wisdom, the fruition of many-sided development, if every power that she possesses is given scope to develop. And without wisdom, she will not be able to make a contribution of any great value either to professional life, or to the subtler, and perhaps harder, task of home-making and the upbringing of children.

SECTION THREE

TRENDS OF DEVELOPMENT IN MODERN EDUCATION

CHAPTER XIV

STRENGTHENING THE FOUNDATIONS

THE EDUCATION OF PARENTS. NURSERY SCHOOLS

IN the light of the analysis of the *living present* (Section One) and of the description of the *living individuals* (Section Two), it is now possible to assess the significance of the chief trends of development in modern education.

One of the most distinctive features of the British tradition of education has been the recognition of the importance of preparatory training in infancy for later and more formal education. As early as 1816, Robert Owen founded at Lanark a "preparatory or training school" for infants whose parents were at work in the local cotton mills. Children were admitted to this school at the age of 3. They were not formally instructed, but were allowed to play in the open air when the weather permitted. The aim of the founder was clearly stated to be to prevent the children from acquiring bad habits, to give them good ones, and to form their dispositions to mutual kindness.

Following on this pioneer work of Robert Owen, many Infant Schools were developed, and by 1870 their educational value was so generally recognized that the age of 5 was adopted in the Education Act of that year as the age of entry to school. Attendance was compulsory from 5 to 13; a few years later 3 was fixed as the minimum age at which children in attendance could count for grant. Infant Schools thus became an integral part of the State

system of education. Although on the continent there had been important contributions to the theory and practice of Infant Schools and Kindergartens by Comenius, Pestalozzi and Froebel, which influenced the whole conception and method of education in all countries, there was no exact parallel in other countries to the British publicly provided Infant Schools. The early official recognition of Infant Schools has undoubtedly aided their spread and development, but obviously it has not been without drawbacks. It has meant close association with schools for older children, where more formal work is being done, and a consequent pressure from above tending towards a distortion of the distinctive "nursery" character, suitable for training in the early years.

Perhaps on this account, the Consultative Committee of the Board of Education who were commissioned in 1907 to report on the question of the attendance at school of children under the age of 5 laid down the general principle that the proper place for children under 5 years of age was the home, except when conditions were definitely unfavourable, when it recommended the institution of Nursery Schools. Some authorities have, therefore, ceased to make provision for the under-fives; and the number of children between 3 and 5 in attendance at Infant Schools relatively to the total number of such children has tended to decline. Thus at the beginning of this century it was 43·1 per cent. and after thirty years had dropped to 13·1 per cent.¹

During the same period, the work of Margaret McMillan at Deptford and the labours of other pioneers in the Nursery School Movement revealed potentialities for good

¹ *Infant and Nursery Schools*, H.M.S.O., 1933, p. 29.

in Nursery School education undreamed of by the 1907 Consultative Committee. In addition, through the development of the biological and psychological sciences and of the applied sciences of preventive medicine and education, our understanding of the laws which govern the many-sided growth of individuals, and particularly our knowledge of the needs and characteristics of infancy, have steadily increased. Indeed, it is no exaggeration to say that evidence concerning the overwhelming developmental significance of the early years of life has so accumulated during this century, that modern educationists have been startled out of their satisfaction with the existing educational system and have been forced to face the fundamental question: *Are the foundations of our educational system well and truly laid or do we begin our efforts to control the environment and thereby to encourage the harmonious growth of individuals when it is already too late?* May not a serious failure in the nurturing and training of children of pre-school years prevent a full return from later educational efforts?

In the detailed study of the period of infancy,¹ it has already been shown that the physical and mental growth of an individual during the early years of life proceeds at a rate unequalled at later stages. The infant quickly learns to modify his appetitive and instinctive modes of behaviour; he acquires habits, good or bad. He learns to use his senses and to co-ordinate his movements; and by sight, touch, hearing, smell, taste, and his power of movement, he adapts himself to his physical environment. He plays almost continually during waking-hours. He begins to explore the world around him. Working from his own

¹ See Chap. VII.

observations he remembers, dreams, imagines, judges, and reasons. Even before school age he is capable of all the elementary thought-processes found, in more complicated forms, in adults.¹

Developments are not confined to the intellectual side of his nature. Perhaps in these early days the emotional and social growth of the individual is even more significant for the future. A child quickly learns to adjust himself to his father and mother and to the other members of his immediate family circle. He begins to communicate with them and soon acquires a working knowledge of his native language (or languages). Guided by his own experience and influenced by the customs and traditions of the social group of which he is a member, he gradually learns to control his primitive impulses and to modify their expression. He receives his first lessons in love or hate in the family circle. His feelings begin to organize themselves into certain patterns which, in turn, play a large part in determining his character and his whole attitude to life.²

Sir George Newman has repeatedly drawn attention to the fact that a large proportion of children admitted to school at the age of 5 suffer from ailments and physical defects, many of which could have been avoided by wise nurture in the early years of infancy. Similarly, it has been revealed that there are many failures of control, repressions, disharmonies in mental development and social maladjustments, which might have been avoided if there had been real understanding of the laws of mental health on the part of adults responsible for the upbringing of young children. The truth is that our existing educational services are all

¹ See pp. 114-6.

² See pp. 118-22.

too frequently "receivers of damaged goods"; and it is more than doubtful whether formal teaching at later stages can ever entirely eliminate the effects on character of an unsuitable social environment and of unwise treatment during the impressional pre-school years.

Just as young children need the right kind of physical environment (sunlight, fresh air, appropriate food, and opportunities for rest) in order that their physical constitutions may be unimpaired, so they need the right kind of intellectual and social conditions to start them on the high-road leading to mental health. They need calm, beautiful, and colourful surroundings, providing them with opportunities to discover the properties of interesting objects, plants, and animals. They need toys, and space in which to play in safety, so that they may exercise both their bodies and their growing powers of thought and imagination. They need rest periods, both day and night. They need companionship, and especially child companionship, in order that they may learn to serve and to love, as well as to be served and loved. They need the care of loving and enlightened parents, who have educated themselves for the responsibilities of parenthood, and who have gained an insight into the laws of human development and a realization of the dangers to mental health both of repression and of over-indulgence in infancy.

The proper place for the child of tender years is undoubtedly the home, if the home is really worthy of its name. The tie between parent and child is so close that the home must necessarily be the premier training-ground of the infants' emotions and therefore of his character.

It has been recently stated by Dr. William Moodie¹ that "in child management the parents' instincts form a much sounder guide than any amount of acquired theoretical knowledge." There is undoubtedly an element of truth in this view. The parents' affection for, and sympathy with, the child is the first condition of successful management. But it is not the only condition. There are relatively few mothers and fathers who are intentionally cruel to their children; but it must be admitted that there are many failures in parental discipline due solely to a lack of insight into the children's natures. There is implied in Dr. Moodie's statement a false antithesis between the parental instinct and the use by the parents of their intelligence in solving problems of child-nurture. Actually, in human beings the parental instinct never remains unmodified by experience or by custom and tradition.

For example, in the Victorian era many fathers and mothers adopted repressive methods of management, not because they were not fond of their children, but because they accepted the traditional view of that date, that such discipline was in the interests of the children. There was nothing the matter with their parental instincts except that these were influenced in their expression by a theory of parental God-Almightiness. If they had been convinced that the preservation of a balance in favour of the "expansive" emotions and sentiments, such as joy, elation, affection, and love, as compared with the "contractive" emotions and sentiments, such as sorrow, subjection, fear, and hate, was necessary for their children's mental and

¹ W. Moodie, "The Work of Child Guidance Clinics for Children under Five," Report of National Conference on Maternity and Child Welfare in *Mother and Child*, August 1935, p. 183.

moral health, they would have adopted very different methods for their management.

It is idle to suppose that the parental instinct is in itself a sufficient guide in the difficult art of child-nurture. The parental instinct is blind unless it is illumined by parental intelligence; but it has dynamic force sufficient to drive men and women to seek the necessary knowledge, and thus to educate themselves for parenthood.

The recognition of the need for study of the laws of physical and mental health in relation to the practical problems of the upbringing of children is not confined to mothers. There are also many fathers who are profoundly interested. For example, this was strikingly revealed in a recent University extension course on Psychology. At the close of the first lecture which had been explanatory of the nature and scope of Psychology, the members of the audience were asked to indicate their preferences for one of the various branches of Applied Psychology. Would they be more interested if the illustrations were drawn mainly from problems of industry, or of child-management, or of social life? It would not have been surprising if the majority of the audience, most of whom were working miners, had shown a preference for Industrial Psychology—for considering such questions as fatigue, hours of labour, vocational guidance and selection, which might have a direct bearing on their work. But actually they chose to study Educational or Child Psychology. As the course developed the intense interest which some of them had in the well-being of their own children was frequently revealed; and in their case was obviously the motive power which enabled them to read regularly and to make a systematic study of Elementary Psychology.

One way in which the foundations of the present educational system could be strengthened would be by making more definite and extended provision for courses in home-management, child hygiene, biology, and psychology, suitable for parents. This could be done either through adult classes run under the present or amended Adult Education Regulations, or through the institution of parents' clubs run in close co-operation with schools or Infant Welfare Centres, or through Broadcasting, especially with study groups. In the past, the classes held under the auspices of the University Joint Committees, the Workers' Educational Association and other Adult Educational bodies have been mainly in Economics, History, and Literature, though recently there has been a marked increase in the variety of subjects studied. The natural interest of parents in their children has so far been relatively little utilized in adult education, except possibly in Women's Institutes. Yet the parental instinct is one of the most dynamic of all human impulses and could supply the motive power for careful observation of the behaviour of children, and for continued study and thought, which would result in deeper understanding of each individual. Such education would not only tend to raise the standard of child-nurture and therefore be for the good of the children, but it would also benefit the parents.

If all homes were reasonably adequate and could provide the conditions necessary for healthy physical, intellectual, and emotional development for children during infancy, then extended provision for the education of parents might suffice for the solution of the whole problem of the under-fives. But it is impossible for anyone who really faces the facts to maintain the view that all homes, or even the

majority of homes, under modern industrial conditions, provide the right conditions for the many-sided development of children in the active pre-school years. Even apart from slum areas, where there is overcrowding, and distressed areas, where there is under-feeding, there are many homes which are drab and sordid, noisy and ugly. There are many more which are cramped and crowded, without gardens or country surroundings, in which the living curiosity and growing powers of exploration of the active toddler must be continually denied, both for the convenience of the rest of the family and for his own safety. There are numerous homes, both rich and poor, where there are *only* children, who either lack companionship or are over-stimulated by adults, and in either case run a grave risk of unhealthy emotional development, perhaps even of parent-fixation. There are other homes, where mothers are ill, neurotic, out at work, or for other reasons fail to fulfil the educational responsibilities of motherhood. In all such cases, where the home fails to provide adequate training and encouragement suitable to these early years, attendance at a Nursery School for certain hours during the day is not a luxury, but a necessity.

A Nursery School is not, of course, a place for formal lessons. It is usually designed for children between the ages of 2 and 5. It is a garden, with a shelter, where children can be properly fed and medically supervised, where they can play freely and can be assured of the rest, air, and sunlight which they so much require at this stage of their development. It is a playground, where in safety they can explore the properties of objects of interest, come into contact with plants and animals and other children, play with toys, and find joy in story, dance, and song. It

is a place where, without any forcing, little children are encouraged to exercise their growing powers of mind and body, and are trained in habits of cleanliness, orderliness, good speech, independence, and consideration for others. In short, it is a community nursery where infants are studied and allowed to unfold in an atmosphere of love and serenity.

The Nursery School has broken away from the older view of education as instruction, and has now a living tradition of its own. There is therefore less risk of its being unduly influenced by demands from above for proficiency in the three R's. A Nursery Class attached to an Infant School is certainly better than no provision at all for the under-5's ; but unless the head of the Infant School is sympathetic to, and has been trained (or re-trained) in, the more enlightened methods of child-nurture, it is improbable that there will be the right "nursery" atmosphere in the class, and there may not be that close co-operation of the parents with the staff which is so essential in this work.

Objections are often raised against the setting-up of Nursery Schools because it is thought that such provision would relieve parents of their natural responsibilities for their children. If this were true it would be a most serious objection. But it should be remembered that parents who can afford it are required to make contributions to cover the cost of the meal or meals taken by their children in the Nursery School. A little imagination too will enable anyone to see that the work expected of many working-class mothers is quite impossible of achievement. Mothers in the professional and middle classes, who have domestic help but who realize the full significance of the

task of nurturing their children, usually regard the care of one or two small children as a full-time job. How can the mother of a larger family who has no domestic help give the necessary time to answer the enquiries and utilize the activities of the toddlers for their good? How can she preserve that serenity of mind which is essential for the development of harmonious relationships between herself and her children? It is little wonder that in the midst of all her manifold household duties she is irritated by their ceaseless activities and has resort to threats and perhaps even to punishment. There is a better chance of her fulfilling her deeper spiritual responsibilities towards them after they return from the Nursery School than there would be if she had no respite from them and was continually confronted with a hopeless task.

In actual practice, a well-run Nursery School does not result in relieving parents of their natural responsibilities, but rather in helping them to fulfil those responsibilities with more insight and understanding, through their contact with the highly trained and sympathetic superintendent. A Nursery School is not only a community nursery, where children of pre-school years are encouraged to grow in body and mind; it is also a centre for the education of parents. Its presence in a locality tends to raise the standard of home life, and to make parents, and indeed other adults, "respect the child" in their midst.

It is no longer possible to argue that it is only a small group of idealists in this country who support the modern case for the extended provision for Nursery Schools. According to the recent Report of the Board of Education, in July 1935 there were 66 Nursery Schools (34 under Local Education Authorities, and 32 maintained by volun-

tary bodies), providing accommodation for close on 5,000 children, already recognized by the Board.¹ A recent Consultative Committee of the Board of Education, after hearing the views of medical officers of health and psychologists, of pioneers in the Nursery School movement and experienced Infant School teachers, has expressed the opinion that "the nursery school is a desirable adjunct to the national system of education."² Notwithstanding present economic difficulties it has accordingly made a general recommendation in the following terms: "that each local education authority should survey the needs of their area, with regard to home conditions and the wishes of the parents; and, after consultation with the Board of Education, should take such steps as may seem to them desirable to provide nurture and training for children below the age of five."³

There is a growing body of enlightened public opinion in favour of the provision of Nursery Schools where there is clear evidence of need. The need exists wherever there are children in this critical period of life, whose homes are inadequate and whose parents, from whatever cause, fail to provide them with the conditions necessary for full physical, intellectual, and emotional development. It should be obligatory on Local Education Authorities to make provision to meet this need, where parents make a demand for it, or where it can be shown to exist from other evidence. In view, however, of the great variety of homes and of the significance of the part played by parents in the emotional development of their children, it would not

¹ *Education in 1934*, H.M.S.O., 1935, Table 25, p. 74.

² *Report on Infant and Nursery Schools*, H.M.S.O., 1933, p. 187.

³ *Ibid.*, p. 188.

appear to be desirable to make attendance at any such school or class compulsory before the age of 5, except in cases where for medical or psychological reasons the home conditions can be shown to be harmful.

More than a century ago, Robert Owen realized that the right training in the early years might have far-reaching effects on individuals' "dispositions to mutual kindness." Some of the most vexed social problems of to-day, such as industrial unrest and organized warfare, seem to arise partly from psychological factors—the selfishness of individuals and their failure to control and sublimate such primitive instincts as acquisition and pugnacity. With the enlightenment of parents, the home and the Nursery School can begin in the early years to educate for service and not for domination. By so doing they can make a contribution to the well-being of society and to the sanity of nations as well as to the mental and moral health of individuals.

CHAPTER XV

EXTENSIONS OF PROVISION—UPWARDS

THE RAISING OF THE SCHOOL-LEAVING AGE

THE old policy—primary education for the poor, secondary and higher education for the more privileged social classes—has now disappeared, at least in principle ; and its successor—primary education for all until the age of 14, secondary and higher education for those able to pay and for those clever enough to win scholarships to Secondary Schools and Universities—has also been severely shaken. In 1926 the Consultative Committee of the Board of Education urged in its *Report on the Education of the Adolescent* that provision should be made for some form of secondary education for all adolescents, and to that end recommended that the age of compulsory school attendance should be raised to at least 15. Since that date, notwithstanding numerous setbacks, including the withdrawal of Government grants for reorganization schemes, the movement for the raising of the school-leaving age has gradually gathered force, so that the question of adequate provision is now one of practical importance. The general question was one of direct interest to the electors in this country in the 1935 parliamentary election. It is therefore a matter of urgency that alternative proposals should be critically examined and fairly judged in the light of agreed educational principles.

There are several recent environmental changes which

seem to point towards the advisability of raising the school-leaving age. In the first place, the widespread condition of unemployment¹ and especially of juvenile unemployment points in this direction. To anyone who approaches this problem from the human end, it appears to be sheer madness to allow half a million children, who need further education for the fulfilment of their powers and who are incompletely adjusted to the elements of their complex social environment, to flood the labour market, when there are already thousands of juveniles without jobs, and when hundreds of thousands of adults, to many of whom work would be intellectual and moral salvation, remain unemployed.

What is the magnitude of the present juvenile unemployment problem? It has recently been pointed out by Jewkes and Winterbottom of the University of Manchester that the official returns give no real indication of the extent of juvenile unemployment, for, owing to the fact that children between 14 and 16 are not insured under the Unemployment Insurance Acts and that only a small proportion of insured unemployed juveniles are in a position to claim benefit, only a fraction of the boys and girls between 14 and 18 who are out of work come within the cognizance of Labour Exchanges. From their independent survey of nearly 21,000 school leavers in the region chosen for investigation, Lancashire and Cumberland, they calculate that in that area about 22 per cent. of the boys and 18 per cent. of the girls leaving school and available for work are still unemployed three months later.²

Further, unless some great change, such as the raising of

¹ See p. 38.

² J. Jewkes and A. Winterbottom, *Juvenile Unemployment*, p. 26.

the school-leaving age or the provision of part-time continued education for juvenile employees, takes place, the problem of juvenile unemployment is likely to be aggravated in the near future, when the effects of the high birth-rate of the years immediately after the War make themselves felt. It is estimated that the number of young persons between the ages of 14 and 18 will climb steadily to a maximum in 1937, and in that year will exceed by 328,000 the number in the corresponding age-groups in 1935.¹

It is true that since 1933, when Jewkes and Winterbottom expressed the view that unemployment (in the northern depressed regions) had reached a point "at which idleness, often for prolonged periods, must be seriously sapping the physical and mental potentialities of those who would normally be the backbone of the community ten or fifteen years hence," the Government has passed an Act providing for the setting up by Local Education Authorities of Junior Instruction Centres (or Classes), at which the Minister of Labour may require the attendance of any unemployed young person between 14 and 18. Notwithstanding the good work done in these centres under very difficult conditions, there is a general consensus of opinion in educational circles that the institution of a few Junior Instruction Centres, at which unemployed juveniles attend intermittently, is merely a cheap and makeshift way of dealing with a problem of vital importance to the well-being of the community. It is surely necessary to take a longer and a broader view. Even the needs of modern industry will not be entirely met by the provision of classes for keeping children pleasantly occupied and therefore out of mischief until jobs come their way.

¹ *The Boy*, Supplement, March 1933.

This kind of casual education is not enough, though it is better than boredom and idleness on street corners. It is not enough even for the needs of industry, to say nothing of the rights of the living individuals concerned. In the past Great Britain seems to have occupied a privileged position as compared with other nations owing to the priority of her industrial development. But she cannot now hope to maintain even a position of equality unless she, like her rivals, recognizes the importance of technical, commercial, and technological education, and develops her human resources in the same progressive spirit in which she previously developed her material resources. In the future she needs to learn "to depend less on cheap coal and more on trained intelligence."¹

Educational policy should not, however, be determined solely, or even chiefly, by the changing needs of industry. There are other features of the living present, of which account should be taken before proceeding to judge of alternative proposals. For example, the movement towards a functioning democracy,² so characteristic of this country, brings with it an increasing need for extended provision for education. "A real democracy," says W. R. Smith, "cannot exist without universal education, and universal education cannot be obtained except in a democracy."³ Not only are the "in and out" methods of the Junior Instruction Centres insufficient to ensure that continuity of intellectual development and social training so necessary for the future responsible members of a democracy, but narrowly vocational training is also insufficient

¹ R. W. Tawney, *The School-Leaving Age and Juvenile Unemployment*.

² See pp. 46-8.

³ W. R. Smith, *An Introduction to Educational Sociology*, 1929, p. 181.

for meeting the many-sided needs of individuals, who in maturity will be called upon to exercise the rights and fulfil the responsibilities of citizenship in a democratic community, and who will probably also enjoy (or endure) considerable periods of leisure.

The increased leisure of adults,¹ whether it falls unevenly on some (the unemployed), as it does at present, or whether it is more fairly distributed in the future, is surely an additional ground for extending the provision for adolescent education, so that in youth individuals may develop their own resources and thereby be prepared to use their leisure wisely in maturity. It also points to a need in the future for more adequate and varied facilities for recreation and education for adults. "Leisure without education," says Dr. Cyril Norwood, "would be a disaster, and education without leisure would be a mockery. If humanity is to set itself free from slavery to materialism, it must claim both education and leisure, and those who stand for the Kingdom of the Mind must be much more outspoken and much more single-minded than they have been."²

It is true that at first the growth of modern science and the resulting development of modern industry tended to mechanize human life; but now, if man can only succeed in educating himself to use his increased leisure in accordance with the laws of physical, mental, and moral health, he has an opportunity to free himself from slavery to materialism. The extensive application of the physical sciences to problems of industry have already given him increased leisure; and the rise of the applied science of Education now makes possible the wise utilization of that

¹ See pp. 39-40.

² C. Norwood, *The English Tradition of Education*, 1929, pp. 304-5.

leisure for the harmonious development of individuals and of society. There is, then, a chance—perhaps only a sporting chance—of a victory on an unprecedented scale for the “Kingdom of the Mind.”

Having reviewed the chief features of the living present to which individuals have to adjust themselves, it now becomes necessary to consider also the natures and needs of the living individuals themselves. Viewed from this end, the problem of the upward extension of facilities for education appears to bifurcate into two parts—firstly, that concerned with adolescents and secondly, with adults.

The psychological case for the postponement of the entry into industry until the end of the springing-up period of early adolescence is simply overwhelming. The need for protective care and sympathetic guidance during this period of rapid and many-sided development is even greater than it was in the earlier period of childhood. The facts concerning the acceleration in the rate of physical growth, the maturing of the sex-organs and the accompanying physiological and emotional changes, the final growth of general intelligence, and the social, æsthetic, and religious awakenings which are characteristic of the period have already been examined in some detail,¹ and are ample evidence, which no fair-minded judge can disregard, of the urgent need for the raising of the school-leaving age. Without some such extension of provision for adolescent education, many boys and girls will virtually be robbed of their final growth-spurt, not only in one but in many directions; and the effects of their earlier education will thus be largely lost to industry and to the community

¹ See Chap. IX.

generally. For example, it is generally agreed that in early adolescence there is usually a real development of the "team spirit" in individuals. This is consequently the period when the practice of co-operation in games and in work, and membership of a school, yield the best results, and when education for citizenship in a democratic community is most likely to be effective. The present method of releasing individuals from compulsory attendance at school at the age of 14, thus cutting the critical period of early adolescence into two, is a strange procedure, wasteful of the nation's most valuable asset and one which could hardly have been better calculated to prevent the subtler adjustments of individuals to the living present and to put a heavy drag on further creative evolution.

It is true that recent official returns show that the number of pupils in grant-aided Secondary Schools in England and Wales tends to increase; and that the average leaving age of these pupils is nearer 17 than 16. But, according to the Report of the Board of Education for 1933, only 16.1 per cent. of the boys and 14 per cent. of the girls leaving Elementary Schools proceed to Secondary Schools.¹ In addition, a few continue their education in Junior Technical and other schools, but the great majority leaving the Elementary Schools (76.9 per cent. of the boys and 79.8 per cent. of the girls) seek employment and have no further opportunity for full-time education.² The corresponding figures for 1934 are even worse.

Of the various reforms which are now being discussed, two need special consideration, namely, the raising of the

¹ *Education in 1933*, H.M.S.O., 1934, Table 7.

² *Note*.—The figures for Wales are somewhat higher: 25.6 per cent. of the boys and 25.2 per cent. of the girls proceed to Secondary Schools.

age for compulsory full-time education, and the provision of part-time continued education. Experiments have already been tried in both directions. A few progressive Authorities—East Suffolk, Caernarvonshire, Cornwall, Bath, Plymouth, and Chesterfield—have in the last few years adopted the age of 15 as the upper limit of compulsory school attendance in their areas. After the "Fisher" Education Act of 1918, which provided that all young persons between the ages of 14 and 18 should be required to attend a continuation school during the day-time for 320 hours per annum (roughly two half-days per week), a number of Day Continuation Schools were set up. Although afterwards the whole policy of developing this kind of part-time education was dropped, a few such schools, including the famous Rugby Compulsory Day Continuation School, still remain.

The National Government returned in November 1935 was pledged to a policy of raising the school-leaving age to 15, with a right of exemptions between 14 and 15 for "beneficial" employment. It dismissed the alternative proposal of part-time attendance at Day Continuation Schools until 16, because "industry as a whole is not so organized that such a scheme could be introduced without widespread dislocation." It seems not improbable that exemptions for "beneficial" employment and for "assistance in the home" will almost nullify the scheme for raising the school-leaving age, unless "beneficial" be interpreted to mean beneficial to the development and future well-being of the boys and girls, and not merely advantageous to the parents' pockets and to the balance-sheets of employing firms. Both the Opposition Parties supported the immediate raising of the school-leaving age

to 15, without exemptions, and a subsequent raising to 16.

It is fortunate that the balance of evidence from the human end goes to show that the agreed policy of raising the school-leaving age to 15 is a step in the right direction, though it does not go far enough. The characteristic changes of early adolescence and the complexity of the social environment to which modern boys and girls need to adjust themselves point unmistakably to the desirability in the majority of cases of deferring entry into responsible work and of continuing full-time education until the age of 16. There may be exceptions, where purposive work with part-time and related education will suit the needs of individuals. Day continuation-school experiments revealed the value of such courses in particular cases, especially where the kind of work engaged in was of the nature of an apprenticeship to a skilled occupation; but they also showed how little can be done by this part-time method for boys and girls condemned to blind-alley occupations.

In a recent Political and Economic Planning publication, entitled *The Entrance to Industry*,¹ the view was put forward that the proposals for the raising of the school-leaving age and for part-time continued education should not be regarded as alternatives. According to this "contribution towards a new employment policy," the ideal solution of the juvenile problem is the raising of the school-leaving age to 15, together with the provision of part-time continued education from 15 to 18. Apart altogether from the difficulty, which experience has shown to be a serious one, of implementing a compulsory part-time system of education without the dislocation of certain industries, this suggested solution does not seem to take

¹ May 1935.

sufficient account of the biological and psychological facts of human development, and particularly of the usual duration of the third springing-up period.¹

There should be *full-time* education until the end of the third growth-spurt, that is, until 16. This would mean that there would be no gap between the age of entry and the age of insurance in industry. A very serious defect in the present system of supervision of the nation's health would thus disappear. Obviously a change of this magnitude can only be effected by stages, but it is well to recognize clearly the end towards which continuous progress should now be made.

The chief difficulty in the way of raising the school-leaving age is undoubtedly the widespread need under present economic conditions for augmenting family incomes by the earnings of children at the earliest possible moment. Some system of maintenance allowances in case of need will have to be devised ; but it should be noticed that as conditions of adult employment in industry and commerce improve, the urgency of this need will tend to decrease.

Between 16 and 18, the hours and conditions of labour should be so regulated as to allow of adequate recreation and of the continuation of education on a voluntary basis. Numbers of young employees in certain industries, notably in engineering and printing, are at present released by employers in order to enable them to attend during working hours courses of instruction related to their occupations. In other occupations these facilities hardly exist. It is difficult to over-estimate the importance of this continued part-time technical education both from the standpoint of

¹ See Chaps VI and IX.

the individual and from the point of view of future developments in industry and commerce. The interest which technical training of the right kind tends to arouse in the job undertaken constitutes a real contribution to the individual's life, as well as to his work. There should therefore be a much more general adoption of the plan of releasing young workers during the day-time for the purpose of vocational education.

It is obvious that the raising of the school-leaving age will depend for its effectiveness on the completion of Re-organization schemes on Hadow Report lines. The continued education given must be appropriate to the period; it must be genuine post-primary (secondary) education. It must also be adapted to the variety of the needs of the individuals to be educated, who will not be nearly so academic a group as the present Secondary School pupils. To this end, bold experiments in which industry is brought into closer contact with the schools will have to be tried out. More scientific vocational guidance will thus become possible, and entrance into industry may cease to be the unorganized scramble which it is at present, and which cannot be good either for the recruits or for industry itself.

It is significant that most of those who most strenuously oppose the extension of provision for adolescent education, and who have children of their own, see to it that their own boys and girls continue their education at least to the end of the springing-up period of youth, no matter what their level of native ability may happen to be. There is a tacit acceptance of the psychological case for the continuation of full-time education until the end of early adolescence, which suggests that the really serious objections to the new policy are on economic and not educational grounds.

EXTENDED PROVISION FOR UNIVERSITY, TECHNICAL, AND
ADULT EDUCATION

The community is not absolved from its responsibilities for the physical, mental, and moral well-being of its members when they reach the age of 16 or even 18. The severity of present-day competition in industry and the constant need for improving the technique of production in order to retain markets for the goods produced, makes it more than ever necessary that there should be extended provision for vocational education and technical training suitable for individuals actually at work or planning to enter a particular kind of skilled job. Similarly, the increased leisure of adults under modern conditions and the heightened responsibilities of citizenship in a democratic community suggest that further provision needs to be made for the recreation and liberal education of young people and adults, not only for the relatively small group of "intellectuals" who have been wont in the past to attend Universities, University Tutorial, Workers' Educational Association, and other more or less formal adult education classes, but also for the ordinary "man in the street" and "woman in the home." It is only by the continued self-education of individuals, even beyond the stage when they are actually faced with the responsibilities of citizenship, that democracy can be "made safe," and the next step be taken in the evolution of improved international relations.

In the past the value of a University education was conceded—for the sons of gentlemen. Now there is general agreement concerning the desirability of extending the period of full-time education into maturity in the case

of highly gifted individuals, of both sexes, and drawn from all classes of the community. The length of training, not only for the "learned" professions but also for the higher posts in industry and commerce, especially those which involve a knowledge of the Applied Sciences, has steadily tended to increase; and it is now generally recognized that suitable recruits for entrance into these services may come from any section of society. The development of the provincial Universities and of the system of Local Education Authority and other scholarships, tenable at Universities and Technical Colleges, the freeing of the older Universities from sectarian tests and the institution of State Scholarships, for which pupils of all kinds of Secondary Schools are to be eligible in the future, show that the community has realized in principle that it cannot afford to deny opportunities for full development and specialized training to its exceptionally able members. It has not yet satisfactorily solved the problem of their selection nor of the differentiation of their courses of study to suit the needs of the individuals and of the community; but it has recognized their right to continue their education into maturity.

Doubt, however, still exists in some quarters in regard to the advisability of extending the present facilities for part-time adult education for ordinary people. Professor R. Peers, who has had considerable experience of the Adult Educational Movement, has recently disturbed the complacency which the findings of the Adult Education Committee's 1919 Report¹ had tended to induce in interested circles by pointedly asking whether adult education is merely an attempt to do extravagantly in later years what

¹ *Final Report*, Adult Education Committee, 1919, H.M.S.O.

ought to have been accomplished with much greater ease in the plastic period.¹ If the answer to this question has to be in the affirmative, then adult education, which the 1919 Report regarded as "a permanent national necessity, an inseparable aspect of citizenship," which should be "both universal and life-long," might have to be acknowledged to be merely a temporary expedient. In this case, the whole adult education movement would seem to be "the outward and visible sign of a poverty and a lack of foresight which we may hope to outgrow."² Professor Peers does not himself draw this conclusion, but he rightly implies that it is a view which must be fairly met by supporters of a policy of extended provision for adult education.

The psychological facts concerning the changes and characteristics of maturity have already been examined in some detail.³ It had to be admitted that there was no available evidence to support the view that general intelligence (as measured by psychological tests) increased after adolescence. Neither had it been shown to diminish, at least until extreme old age. There were, however, grounds for believing that special interests develop during maturity and that the power of thought in relation to these increases with the growth of experience. Each of the major emotional adjustments of adolescence—the finding of a vocation, the development of sexual and social emotions, and the search for a philosophy of life or a religion—tends to have far-reaching effects on individual development during maturity. It constitutes a new powerful drive which leads its possessor to seek knowledge of an appropriate kind and to find new forms of self-expression.

¹ R. Peers, "Some Applications of Educational Theory to Adult Education," *Journal of Adult Education*, September 1926.

² R. Peers, *Ibid.*, p. 38.

³ See Chap. X.

The notion that mental growth is limited to youth is, then, definitely contradicted by the psychological facts concerning maturity. Consequently adult education must not be regarded as a luxury for a few exceptional persons, but must be open to all who desire it. Just as the philosopher, artist, scientist, or professional man develops his powers through reflection and experience, so ordinary men and women may develop in maturity through thought, and especially through co-operative study, along the lines of their own interests, which are usually closely related to the various duties which life brings. The opportunity for adult education should consequently be spread over the whole community, so that every individual is encouraged to do his or her work intelligently, to use his or her leisure wisely, and to fulfil the responsibilities of citizenship and perhaps of parenthood with knowledge and understanding.

It is true that to be effective, adult, like adolescent, education needs to be "reorganized," to be made more appropriate to the stage of maturity and to the great variety of individuals who need it. "Its scope extends to every aspect of life in which men and women have interests upon which processes of thought can throw light, and to all the pursuits of leisure which have a cultural value, and which are therefore a means towards a good life."¹ It should remain largely on a voluntary basis; but this is no reason why every encouragement and assistance should not be given to voluntary organizations, so that their work may be developed and find its proper place in the national educational system.

The really serious difficulty in the way of an extension of provision for adult, as for adolescent, education is neither

¹ *The Scope and Practice of Adult Education*, H.M.S.O., 1930.

psychological nor educational, but economic. "Can we afford it?" is the crucial question. In recent years there has been a considerable increase of expenditure on education, and this has already aroused criticism in some quarters. It should be noted, however, that the increase in the cost of State education is small compared with the total increase in national expenditure. Thus, comparing the year 1931-2 (estimate) with 1913-14, 65.5 per cent. of the total increase in national expenditure was due to war debts, pensions, and the Defence Services, and only 6.35 per cent. would have been incurred through the development of the Educational Services, even if there had been no economies recommended.¹

It would be inappropriate in this study of the trends of development in education to consider in detail how money is to be found for the changes that are advocated; but it is important to notice that it is highly improbable that any nation will be able to spend what is required on its *creative* services, if it continues to compete in the irrational race of armaments, and thus to spend on its *destructive* services more than it can possibly afford. In the past, money has often been found for the conduct of wars by borrowing. Many nations have accumulated war debts, but none so far have incurred large debts for the educational services. Consciously or unconsciously, a system of values has been adopted which ranks the mere preservation of a people higher than their education or development. The *destructive* services, therefore, take precedence of the *creative* services. Now there are signs of a change in this system of values. Some are beginning to see that living individuals are of more account than material wealth; that the

¹ *Report of Committee on National Expenditure*, H.M.S.O., 1931, p. 235.

spiritual life, which is ever creative, is more important than physical force, which is sometimes destructive. The pendulum is beginning to swing away from the complicated life of comfort and convention towards a simpler life of high adventure in thought and action. Some are even beginning to believe in persuasion rather than force, as the means of settlement of disputes between nations. In proportion as this new morality gains adherents, there will be an increasing willingness to sacrifice material wealth for the education of living individuals, and to take risks for the evolution of a better order of society.

Men are now faced with the unprecedented danger that the material wealth which they have secured through their conquest of the physical universe may lead to the complication and mechanization of human life. The machines which they have invented may destroy them and their civilization. They can only save themselves by taking the risk, also unprecedented, of educating themselves for a more spiritual way of living and a higher morality. "Theirs is then the responsibility," says Bergson, "for deciding if they want merely to live, or intend to make just the extra effort required for fulfilling, even on this refractory planet, the essential function of the universe, which is a machine for the making of gods."¹

¹ H. Bergson, *The Two Sources of Morality and Religion*, tr. R. A. Andra and C. Brereton, 1935, p. 275.

CHAPTER XVI

REORGANIZATION

THE modern movement towards the Reorganization of adolescent education is closely associated with the name of Sir Henry Hadow, the Chairman of the Consultative Committee of the Board of Education, which was responsible for the 1926 report,¹ which recommended the raising of the school-leaving age together with considerable differentiation of provision for post-primary education. It also advocated a clean cut at 11 + and an end-on arrangement between primary and all forms of post-primary education.

Considerable progress has since been made in the reorganization of schools on the lines of this report. The extent of the changes already completed can be readily appreciated from a study of the recent statistics of the Board of Education. Thus by March 1934 there were 2,612 departments classified as "senior," containing 800,651 pupils of 11 and over; and 5,922 departments classified as "junior." There were also senior divisions, providing a separate course of instruction for pupils over 11, in many all-age departments. The Board calculates that on March 31st, 1935, the latest date for which official returns are available, approximately 53 per cent. of the total of pupils aged 11 and over were in reorganized schools.²

¹ *The Education of the Adolescent*, H.M.S.O., 1926.

² *Education in 1934*, H.M.S.O., 1935, pp. 6-8.

It is perilously easy to be captivated by a plan for reorganization which looks well on paper, and to imagine that the mere movement of children into different buildings in accordance with such a scheme, accompanied by the reiteration of the magic formula "Reorganization" as a kind of benediction to the upheaval, will somehow effect an improvement in education. Nothing could be farther from the truth. Unless teachers, administrators, and members of Local Education Authorities, responsible for educational policy, take the trouble to understand the principles underlying Hadow reorganization proposals and face up to the new problems involved, there will be no real improvement in *quality* of education.

The significance of the reorganization movement can only be fully appreciated when it is considered as part of a larger trend of development. The publication of the Report on the education of the adolescent was followed in 1931 by a second, entitled *The Primary School*, which outlined the provision and methods appropriate for the earlier period of childhood. In 1933 there was a third Report on Infant and Nursery Schools, dealing with the needs of infants. The three Reports and the changes which have followed upon their publication represent the first big-scale realization in this country that the *organization* of education, as well as the methods of teaching and discipline within the schools, should be psychologized. The educational system should reflect the periodicity of human growth and at the same time, where necessary, be adapted to the chief varieties of individuals for whom provision has to be made.

The chief facts concerning the periodicity of human growth have already been reviewed.¹ It has been shown

¹ See Chaps. V-X, especially Chap. VI.

that while the development of each individual is both unique and continuous, there is usually a common rhythm in the unfolding of the life-histories of human beings, even when they are widely separated by circumstances and experience. There is first the period of infancy from birth to about 5 ; then childhood roughly from 5 to 11 +, and then adolescence from 11 or 12 to 21 or somewhat later. Each of these consists of a rapid springing-up, followed by a period of consolidation. Then comes maturity and, finally, old age.

The general organization of education should reflect this rhythm of development ; and the training given in any period should be adjusted to its distinctive needs and characteristics. Thus nursery or Nursery School education is that appropriate to infancy ; primary education, including that of both Infant and Junior school, should be appropriate to the two sub-periods of childhood ; while secondary education should be adjusted to the needs of early adolescence, and higher education to late adolescence and maturity. Such a psychological view is essentially democratic ; but it will not mean that every individual in a democracy should have the same education. For individuals differ widely in respect to their native abilities,¹ and on this account it may be necessary to have varied provision for education so that each may have opportunities for development appropriate for his gifts as well as his stage of development.

The case for appropriate training in infancy in the home and in the Nursery School has already been considered. It has been shown that extended provision for the education of parents and for the setting-up of Nursery Schools where need exists is essential in order that the foundations of the whole education system may be well and truly laid.²

¹ See Chaps XI-XIII.

² See Chap. XIV.

THE INFANT SCHOOL

The second springing-up period from about 5 to 7 or 8 is characterized by rapid growth of body and mind.¹ At 5 attendance at school becomes compulsory, and under existing arrangements most children spend this sub-period in the Infant School, as opposed to the nursery, Nursery School, or Nursery Class (attached to an Infant School). Many children have their first real break with the home circle at the beginning of this stage, and it naturally constitutes a test of previous preparation. If a child has been properly trained towards independence and has learned to co-operate with others, if he has already developed interests in books, pictures, and toys, and has amused himself by painting, drawing, and modelling, he will be readily interested in school occupations and will have no serious difficulty in adjusting himself to the larger school world. On the other hand, if he has been spoiled and petted, or if he has been neglected so that his interests are undeveloped, he may have a difficult beginning.

In Adler's opinion there are many children who come to school "without any ability for concentration. They are generally the pampered children, who are dazed by the presence of so many strange persons." They have "no patience for meeting difficulties and forging ahead by conscious efforts."² Adler is right in his assumption that sound preparation can help a child through the testing-time when he first goes to school; but the right kind of pre-school training is not all that is required. The methods of the Infant School must be such as to make the transition as smooth as possible. "Conscious efforts" cannot play

¹ See Chap. VIII.

² A. Adler, *The Education of Children*, 1930, pp. 168 and 169.

a large part in the development of 5-year-olds. Indeed, throughout the Infant School period, education should proceed far more on an "interest" and "project" basis than on a "conscious effort" and "subject" basis.

It is not to be expected that children of 5 can "forge ahead by conscious efforts," but they have considerable powers of concentration when they are genuinely interested. They should therefore continue to be free for long periods to choose their own occupations. It is doubtful whether much is gained in the long run by formal class work at this age in Reading, Writing, and Arithmetic; but many children will enjoy "picking up" the reading of labels on interesting objects, or phrases associated with pictures, nursery rhymes, and stories. They will be interested in writing their own names and in trying to send messages on Christmas cards or in letters. They will readily perform simple arithmetical operations in relation to games of skittles, sand castles, and shops. The provision of the right equipment for play and the wise guidance of an understanding teacher will bring about informally all that is essential, if the class be not too large.

It is true that there are some children of 5 who like reading as reading, and number as number; and for these provision will need to be made. But it is imperative that, during this period of rapid growth, with its high incidence of infectious illnesses, there should be no undue pressure due to a failure to recognize the variety of individuals of one chronological age. It has been pointed out that there is a growing body of support for the view that formal instruction should be postponed until a child attains the *mental* age of 6 or $6\frac{1}{2}$.¹ One child, whose I.Q. is 125 or

¹ See p. 135.

over, may be ready to begin at 5 or even before ; another of average intelligence will do better if formal instruction is postponed until about 6 ; while another, whose I.Q. is 90 or less, would profit by still further delay.

It follows that the time-table for the 5-year-olds should be elastic and the number of children to one teacher not too large—to allow for individual occupations as well as group work and play. A time-table will be useful as a guide in order that a balance may be preserved and opportunities be given for the expression of the chief interests of individuals. There should be physical, including rhythmical, exercises, such as musical games, dancing, and action songs ; Nature study and the exploration of the real world ; expression work in different material media ; and lastly, opportunities for development in the understanding and use of language.

Even in the following years (6 and 7), when formal instruction is appropriate for the majority, the amount of time spent on the three R's should be related to interest ; for where this exists, learning proceeds quickly and children make up for late beginnings. It must be remembered that the period from 5 to 7 + is a period of play ; and play methods should therefore continue to be emphasized throughout the Infant School. It will be objected that this is impossible because the Junior School demands a certain standard of achievement in the three R's on transference at 7 +. The Junior School defends itself by placing the responsibility for this pressure on the next stage—the requirements of Secondary School entrance examinations ; and so it goes on right up to the University with its Matriculation regulations.

The basic principles underlying “ Reorganization ”

proposals are clearly applicable, in a modified form, even to the Infant School. It should be adjusted to the distinctive *play* character of the period from 5 to 7, and also to the variety of abilities of the children in attendance. Education should be psychologized; and each individual should be respected and not squeezed into a standardized mould. It is of course true that an individual should be encouraged to adjust himself or herself to the living present; it is also true that books and reading constitute an important element in modern life. It should, however, be remembered that the more recent development of modern science is beginning to deliver mankind from an earlier slavery to the printing-press. Reading and writing will continue to be important; for they are tool subjects, which open up new worlds of thought to the individual. But the study of Nature, the exploration of the world of sense, experimentation with the environment, and the use of tools must also be regarded as important to a generation who are the inheritors of modern science, art, and music, as well as of literature and philosophy.

THE JUNIOR SCHOOL

The Junior School in a reorganized system of education is a free, publicly maintained school for children between the ages of 7 + and 11 +. In estimating the advantages of Reorganization there is frequently a tendency to concentrate on the seniors and to ignore the effect on the juniors. But a clean cut at 11 + will mean that teachers in Primary Schools will no longer be hampered by the presence of boys and girls of 12, 13, and 14, who fail to pass on to Secondary Schools, but who need very different treatment from the younger children if they are to continue

their education and not merely to mark time. The problem of the education of juniors, after Reorganization, will therefore tend to be more clearly defined and consequently will have a better chance of solution.

The Junior School should be appropriate to the period of consolidation between the rapid growth of early childhood and the critical developments of early adolescence. The main characteristics of this stage have already been described.¹ It is a period when health tends to be good, when all the elementary thought-processes are present and are being exercised in wider fields of experience, and when there is likely to be a steady growth of self-confidence and an easy extension of the emotional life without strain or upheaval. In a sense, it is more like maturity than it is like infancy or early adolescence, except that it stands half-way between them in regard to the development of general intelligence. It has been shown that the balance of evidence does not support Piaget's view of a definite break in kind of thinking at 7 or 8, but rather indicates a continuous advance in scope, clarity, and complexity of thought.

The psychological facts indicate the need for plenty of opportunities for physical exercise, construction, and the exploration of the real world. Hard work and play may be expected; and even repetitive and routine work will usually be enjoyed at this stage. It is therefore the natural period for practice in the tool subjects—Reading, Writing, and Elementary Mathematics—but it is also the natural period for the acquiring of many skills and habits. No one who has watched small boys at play with Meccano and similar "construction" toys can doubt their powers

¹ See Chap. VIII.

of concentration and their willingness, aided by this interest in construction, to repeat operations which on this account seem to them to be worth while.

The main problem of the Junior School is that of preserving a suitable balance between the two great media of education, handicrafts and language; and the interests of boys and girls at this stage certainly suggest that the centre of gravity of the curriculum should be rather in the first than in the second. "The more active subjects," says Dr. Burt, "particularly those that give scope for constructive work, are the prime favourites."¹ Yet it is important that in childhood adequate preparation should be made so that literary and humanistic interests can develop, as they should, in the next period. The best solution is not one of allotting more time to handwork as such, but of using active expression work as the natural method of teaching all subjects in the Junior School. In history there should be the drawing and painting of illustrations; in geography the making of maps; in Nature study the planning of a garden and the keeping of pets; in elementary mathematics the making of models; in music the playing on pipes and other instruments; and in English the making of properties and the acting of plays. In addition to the special periods set apart for handwork, there will need to be a practical approach to all subjects, so that no violence will be done to the constructive impulses and realistic interests of the pupils at this stage of their development.

SPECIAL SCHOOLS

Although the main problem of the Junior School is simplified by the smaller age-range of its pupils, there will

¹ *The Primary School*, H.M.S.O., 1931, Appendix III, p. 278.

be variations in physique, general intelligence, and other powers among the children, of which account will still need to be taken. For a considerable time in this country provision has been made for the education in Special Schools of those children, such as the blind, deaf, crippled, and mentally defective, who suffer from defects of such magnitude that they cannot profit by the ordinary education provided. Recently it has been realized that the acceptance of the principle of adjusting education to suit individuals may lead to further differentiation even at the Junior School stage.

When all children who have to be classified as definitely defective have been provided for, there will still remain a wide range of variation in general intelligence, from I.Q.s of about 70 per cent. to those of 150 per cent.¹ Children at the lower end of the scale certainly need a simplified curriculum and special methods of teaching. They will lose hope and tend to become difficult, lazy, or anti-social, if their training is not more exactly adjusted to their native abilities. Special schools or special classes attached to ordinary schools are therefore necessary for such permanently retarded children. There are, however, other children whose backwardness may be of a temporary character, and whose difficulties may disappear, given the right kind of individual and remedial care. There is therefore an urgent need for correct diagnosis, and on this account the setting-up of Child Guidance Clinics for the investigation and treatment of cases of backwardness and maladjustment is a desirable adjunct to the existing educational system.

In the near future it is highly probable that the needs of

¹ See pp. 188-90.

children of unusually high intellectual ability will also receive more adequate consideration. The scientific study of specially gifted children has already revealed the fact that many of them tend to have certain difficulties of social development directly traceable to their exceptional intelligence. For example, a child, whose chronological age is 9 and whose mental age is 14 or 15, may very naturally find it difficult to make friends or to find congenial companions in school. On the one hand, the games played by children of the same age will not be sufficiently stimulating intellectually to interest him ; and on the other, his age and size may make him unacceptable to boys of 14 or 15, who are his mental peers. He may therefore fall between two stools, become remote from his fellows, and perhaps as a consequence fail to learn how to use his great natural ability for the service of his race. It is true, as Sanderson of Oundle said, that " we must not cast out our weak ones " : but it is also true that we must do no violence to our strong ones, who alone are capable of the highest forms of intellectual adventure and who are perhaps destined to play an important part in the further evolution of the human race.

SCHOOLS FOR ADOLESCENTS

The educational case for the raising of the school-leaving age and for the continuation of full-time education until the age of 16 has already been examined. The complexity of the environment to which the present generation of boys and girls must adjust themselves, the responsibilities which are to be theirs in a democracy, and the physical, intellectual, and emotional changes characteristic of early adolescence, admit of only one conclusion—that there should be

secondary education for all adolescents. By secondary education I do not mean the marking of time in a school designed for juniors ; nor do I necessarily mean the traditional Grammar School kind of secondary education. Secondary education is genuine post-primary education, designed for, and appropriate to, the period of early adolescence, the last "springing-up" period in human life-histories. This stage is characterized by rapid physical, intellectual, and emotional growth, by the development of humanistic and scientific interests, by the intensification of the sexual emotion, and by the deepening and broadening of æsthetic, social, and religious emotions. Secondary education should minister to, and preserve a balance between, these various developments, thus aiding the natural growth-processes within the individual.

Many supporters of the "Secondary Education for All" Movement do not realize the need for differentiation of provision to suit the many varieties of native ability found among adolescents. Yet it is clear from recent investigations of general intelligence that the wide range of variations, found in an unselected group of individuals, becomes of even more significance at the secondary, than it was at the primary, stage. For example, suppose that the I.Q.s of a large group of children of 7 (excluding mentally defectives) varied from 75 per cent. to 150 per cent. Then the mental ages represented would be from $5\frac{1}{4}$ (75 per cent. of 7) to $10\frac{1}{2}$ (150 per cent. of 7) years. When the same children have reached the age of 11, the mental ages for which provision will now need to be made will be from $8\frac{1}{4}$ (75 per cent. of 11) to $16\frac{1}{2}$ (150 per cent. of 11) years, a wider range of about 8 years as compared with 5 at the earlier period. On this account, educational attainments

are also markedly different by 11 or 12, even when there have been equal opportunities for learning. The differentiation of provision for adolescents, which is an essential feature of reorganization schemes, is a practical recognition of these accumulative differences between individuals.

There are two chief ways in which the necessary differentiation of provision for adolescent education might be effected. In the first place, there might be three separate kinds of schools for adolescents—the first, the Grammar School, for pupils of high native ability, whose bent is academic; the second, the Modern or Selective Central School, also for pupils of good ability, but whose interests are largely practical; and the third, the Senior or Non-Selective Central School, for adolescents of lower general intelligence, who will need a simpler, less burdensome curriculum. The other alternative is that of having sides within one Secondary School, either for the two groups of individuals of more than average ability, or for all three groups.¹ It was the first of these alternatives that was recommended in the Hadow Report.

“As post-primary education develops,” says this Report, “the schools dealing with the post-primary or secondary stage of education should include (in addition to Junior Technical and Trade Schools) at least the following main types :

“(i) Schools of the ‘secondary’ type now commonly existing which at present follow in the main a predominantly literary or scientific curriculum, and carry the education of their pupils forward to the age of at least 16 +.

“(ii) Schools of the type of the existing selective Central

¹ For a fuller consideration of the advantages and disadvantages of these alternative solutions, see O. A. Wheeler, *Youth*, Chap. VIII.

Schools, which give at least a four years' course from the age of 11 +, with a realistic or practical trend in the last two years.

“(iii) Schools of the type of the existing non-selective Central Schools, which may either be the only central schools in their area, or may exist side by side with selective central schools, and cater for those children who do not secure admission to such schools.”¹

In the main, this scheme has either been, or is now in process of being, implemented by the majority of Local Education Authorities. Under some authorities there are in addition Junior Technical and Junior Housewifery Schools which provide a preparation for industrial or commercial employment or for domestic life, with continued general education in full-time courses of two or three years for pupils admitted at 13 or 14. There are also a few Trade Schools, which prepare for entrance into highly specific occupations and which are even more definitely vocational.

The administrative complexities that arise through the division of education into three branches—Elementary, Secondary, and Technical—and the illogical placing of Central and Senior Schools in the Elementary group, although by the nature of their task they belong to the Secondary group, the resulting injustice to Central School teachers in respect to salary scales, and the difficulties of dual control are dealt with in some detail in the Hadow Report.²

From the point of view of the children's interests, there is a serious difficulty in regard to the selection of candidates

¹ *The Education of the Adolescent*, H.M.S.O., 1926, p. 79.

² *Ibid.*, Chap. I.

for admission to the differentiated schools. Much more work will need to be done on Secondary School entrance examinations and on intelligence tests, in relation to school and later achievements, before more refined and reliable methods of selection will be discovered. Fortunately, researches of this kind are being actively pursued in various quarters ; and in time these will no doubt yield results of great practical importance.

Although there are many "free" places in the first type of Secondary (Grammar) School, the practice of charging fees, which is a relic of the former tradition of social selection, still has a considerable effect in "skewing" the selection of candidates to the disadvantage of poor children as compared with children of equal or less ability whose parents can afford to pay fees. Gray and Moshinsky (of the London School of Economics) have recently completed a statistical enquiry concerning the distribution of educational facilities in relation to the distribution of ability within different social classes in England, and have proved that there are marked inequalities of educational opportunity under the existing system. They have shown that an able fee-paying pupil (I.Q. 130 or 140 per cent.) "has a chance of receiving a higher education either six or seven times greater than that of an equally able free pupil"; and that "a sub-standard child of the fee-paying group has an opportunity of receiving a higher education between 58 and 162 times greater than that of a similar child of the free group."¹ One result of their statistical analysis is to indicate that 45 per cent. of the total number of children in the school population with I.Q.s of 140 per cent. do not

¹ J. L. Gray and Pearl Moshinsky, "Ability and Opportunity in English Education," *The Sociological Review*, April 1935, p. 158.

enjoy the opportunity of a higher education. "None of these belong to the group whose parents are able and willing to pay fees for their children's education. The entire mass of unutilized talent consists of children for whose education the requisite financial provision from public funds is not available."¹

Some recent changes in Government policy in regard to the charging of school fees have tended to increase this discrepancy. From April 1st, 1933, all grant-earning Secondary Schools were required to charge fees at appropriate rates, although there were still to be "special places" which would carry exemption from fees in case of need. The result has been that there are no longer any such schools entirely free, and the total number of schools charging fees of 6 guineas or less in England (excluding Wales) is only 43. The majority (502 schools) charge fees of from 9 to 12 guineas; and in some cases the fees amount to 25 or 30 guineas per annum.² It is true that, according to the latest returns, 48.1 per cent. of the pupils of such schools were totally exempt from the payment of fees; and in addition 5 per cent. received partial exemption. But in the first year after the operation of the new regulations, the proportion of children leaving the Elementary Schools and proceeding to Secondary Schools in England and Wales fell from 16.1 per cent. to 12 per cent. in the case of boys, and from 14 per cent. to 10.8 per cent. in the case of girls.³

This change of policy in regard to the charging of fees, and especially the temporary severe limitation of the per-

¹ J. L. Gray and Pearl Moshinsky, "Ability and Opportunity in English Education," *The Sociological Review*, April 1935, p. 152.

² *Education in 1934*, H.M.S.O., 1935, Table 37.

³ *Education in 1933 and Education in 1934*, H.M.S.O., 1934 and 1935, Table 7.

centage of "special" places in many Secondary Schools (which has since been withdrawn), was a reversion to the earlier anti-democratic tradition and was contrary to the whole movement towards the freeing and psychologizing of secondary education. It is bound to result in a wastage of exceptional ability which a democratic nation cannot afford to contemplate with any complacency.

BOYS', GIRLS', AND MIXED SCHOOLS

In a reorganized system of education, should provision for boys and girls be made in separate schools or in mixed schools? The majority of educationists are agreed that there is no strong case for the separation of sexes, at least until the beginning of adolescence. Actually, all Infant Schools in this country are mixed; and there are nearly twenty times as many mixed Junior Schools as there are either girls' or boys' Junior Schools. There are, however, only slightly more mixed Senior Schools than there are Senior Schools for boys or for girls; and there are slightly less co-educational Secondary Schools than there are separate schools for boys and girls.¹

There is considerable difference of opinion concerning the question of co-education during early adolescence. The intellectual differences between boys and girls are not any greater than those found between members of the same sex, and although the physical differences and special interests would have to be taken into account, it is an open question whether the variety would not be found to be useful in the development of the corporate life of the school.² Further, since the sexual and social emotions develop

¹ *Education in 1934*, H.M.S.O., 1935, Tables 11 and 34.

² For a fuller treatment of this question, see O. A. Wheeler, *Youth*, Chap. IX.

rapidly during this period, and social training is consequently of outstanding importance, a very strong case could be made out for the mixed school, which provides many opportunities for co-operation between boys and girls. On the other hand, many practical teachers hold that it is easier to effect the desirable differentiation of the curriculum for boys and girls when they are in separate, rather than in mixed, schools; and that it is better for adolescent boys to be taught by men teachers and for adolescent girls to be educated by women teachers. The balance of opinion, from purely educational considerations, is so nearly equal that experiments along both lines can undoubtedly be justified. Probably, the vexed question of the promotion of men and women teachers to headships will be more equitably solved by the adoption of the policy of separate schools, where the numbers of pupils permit, at least until professional and public opinion is more advanced than it is at present, and is ready to support promotion on merit and suitability, irrespective of sex.

On this ground of expediency, the majority of schools for adolescents might very well continue to separate the sexes. But where there are teachers with a great faith in co-education, it would seem to be a pity to discourage and prevent them from undertaking experiments which would in any case be useful for purposes of comparison, and which might reveal possibilities of a higher order of social education during adolescence than that formerly sanctioned by tradition.

CHAPTER XVII

UNIVERSITY AND TECHNICAL EDUCATION

THE democratization of University education was one of the outstanding features of the nineteenth century. Oxford and Cambridge had existed for centuries and had played a notable part in the advancement of learning and in the education of the sons of gentlemen. But it was only in 1826 that the first University College on a regional basis was instituted in London. It set out to provide for "young men residing in or resorting to the cities of London and Westminster, the Borough of Southwark, and counties adjoining either of the said Cities, or to the said Borough, adequate opportunities for acquiring Literary and Scientific Education at a moderate expense." It was quickly followed by its rival, King's College; and in 1836 the University of London was founded by Royal Charter. Then came the provincial Universities, beginning with Owens College, Manchester. Within a hundred years, there gradually developed a *regional* system of University education for both men and women throughout England and Wales—surely an amazing achievement. It grew side by side with, and in the closest relationship to, the expanded system of grant-aided secondary education; so that it has now become relatively easy for any Secondary School pupil of outstanding ability to continue his or her full-time education into late adolescence, aided, if need be, by Government grant, State, Local Education Authority, or University

scholarship. Even the older Universities, which in former days had been almost exclusively fed by the English Public Schools, have more recently opened their doors to the best products of the newer Secondary Schools.

The result has been that in the last fifteen years, for example, the number of full-time students in Universities and University Colleges in England and Wales has increased by more than 50 per cent. and now exceeds 50,000, of whom about three-quarters are men.¹ Notwithstanding this, there are still proportionately about twice as many University students in Germany as there are in England and Wales, three times as many in Scotland, and ten times as many in America.

Colleges for the training of teachers, as well as training departments attached to Universities, have developed in the same period. More recently there have arisen other institutions, such as Technical Colleges, Schools of Art and Music, and Literary and Scientific Institutes, which are less closely knit than Universities are with the existing Secondary School system, but which also offer part-time and in some cases full-time courses of vocational and technical education beyond the age of 17. Not only has the number of students taking full-time continued training increased steadily in recent years, but there has also been a striking increase in the number of part-time students and in the variety of specialized courses offered in technical, commercial, and other similar institutions.²

It is high time that this country had a considered policy in regard to University and Technical Education. What is the real function of a University in modern society?

¹ *Statistical Abstract*, H.M.S O., 1935, Table 33.

² *Ibid.*, Tables 39 and 44.

How should it be adjusted to the living present? Has the nineteenth century given us a surplus, or left us with a deficiency, in the number of provincial Universities established? Are there too few or too many students attending full-time courses at Universities? What general principles should govern the extension of provision for technical education—an extension which is undoubtedly an urgent national necessity in view of present-day industrial conditions? What should be the relationship between Universities and Technical Colleges, and between each of them and the various forms of post-primary education which precede them?

British Universities have a long intellectualist tradition. In his famous essay on *The Idea of a University*, published in 1852, Cardinal Newman clarified the prevailing view of the function of a University. "A University," he wrote, "by its very name professes to teach universal knowledge." The various branches of knowledge are not, of course, to be regarded as distinct and separate, but as essentially related to one another. "Thus is created a pure and clear atmosphere of thought, which the student also breathes, though in his case he only pursues a few sciences out of the multitude. . . . He apprehends the great outlines of knowledge, the principles on which it rests, the scale of its parts, its lights and shades, its great points and its little, as he otherwise cannot apprehend them. Hence it is that his education is called "Liberal." A habit of mind is formed which lasts through life, of which the attributes are freedom, equitableness, calmness, moderation, and wisdom."¹

This conception of a liberal education has permeated the

¹ J. H. Newman, *The Idea of a University*, 1852, pp. 101-2.

newer, as well as the older, Universities; and notwithstanding increasing specialization has so far enabled them to maintain a fairly high standard of scholarship and to avoid the extravagances of the atomistic specialized courses of some American Universities. It has made all of them, with the single exception of London, regard it as essential that a student should be in continuous contact with his College or University for a period of years before he can be admitted to a degree. It is not that he could not "get up" the subjects for degree examinations, as many London "external" students do, but that he would miss "the pure and clear atmosphere of thought," the life of intellectual adventure which is possible in centres designed for the imaginative consideration of learning. "Universities," said T. H. Huxley, "are places where thought is free from all fetters." In the main, though there is an increasing danger of over-specialization, the British Universities have striven to encourage in their students breadth of view and open-mindedness. They have set a high value on pure scholarship and on their own freedom. They have clearly recognized that their function is not limited to teaching, but includes also the conservation and interpretation of knowledge and ideas and the search for truth. The members of their staffs have enjoyed intellectual freedom; and in the main their researches have tended to be disinterested rather than directly controlled by utilitarian motives.

The success of the Universities in embodying this conception of a liberal education in their organization has, however, been purchased at the price of a certain remoteness from the problems of the workaday world, and a consequent "lag" in adjusting themselves to the living

present. Modern industry is a characteristic feature of the living present ; and although it is no business of a University to concern itself with the specialized training of individuals to fit them to enter particular occupations in industry and commerce, it fails to live up to its ideal of universal knowledge if it neglects to make proper provision for the chief applied sciences and fine arts in which man's creativeness is now expressing itself. It cannot be denied that some of the Universities have failed in this respect, partly no doubt because of their totally inadequate financial resources, but also because of a prevailing false antithesis in University circles between *liberal* and *technical* education.

On the other hand, Technical Colleges and other similar institutions have developed out of the needs of, and in close relation to, modern industry. They may lack "the pure and clear atmosphere of thought" of the Universities, but there is in them a vocational purposiveness and a zest for variety which is unhindered by academic considerations. They are usually also less hampered in their development by financial difficulties than are Universities. Although the bulk of their students are part-time and many are under the age of 18, so that much of the work done is necessarily elementary, there are many Technical Colleges which have full-time senior courses in such branches of study as Engineering, Mining, Metallurgy, Pharmacy, Commerce, Art, and Architecture. In some cases this has led to the provision of degree courses in the applied sciences and the closely related pure sciences, and in Commerce and Economics. There has thus resulted considerable overlapping with the work of the regional University. There is a similar confusion in regard to part-time courses, the Universities being

responsible for tutorial classes and extension courses under the Adult Education Regulations, voluntary bodies such as the Workers' Educational Association taking charge of other "liberal education" courses, and the Local Education Authorities being responsible for "technical instruction" centres.

Before any conclusions can be drawn concerning the need for adjustments in the existing provision for university and technical education, the whole problem must be looked at from the human, as well as the institutional, end. The general principles which have been shown to underlie Hadow reorganization proposals—namely, that education should be more accurately adjusted, firstly to each stage of development, and secondly to the chief varieties of individuals for whom provision should be made—are applicable, at least in a modified form, to the solution of the educational problems of this later stage.

The chief facts concerning the characteristic developments of late adolescence and maturity have already been examined.¹ It has been shown that the three major adjustments of youth—the finding of a vocation and of economic independence, the development of a heterosexual attitude and the broadening of the social interests, and the finding of a religion and/or an ethical code—are not completed even in late adolescence. It follows that there is the possibility in later life of the development of vocational and leisure interests, of the perfecting of the functions of parenthood and citizenship, and of the growth of a philosophy of life. That adults do voluntarily seek for guidance and co-operation in the nurturing of these interests is evident, both from the continued achievements of the Adult Educa-

¹ See Chaps. IX and X.

tional Movement and from the recent striking success of the Women's Institute Movement.

An individual may desire to join a class for the study of his job and all that relates to it; he may feel the need of technical training, so that he may be more successful in his work. Starting from this real vocational interest, he is perhaps able to exercise his powers of thought as well as, or even better than, he could in any other direction. If this be so, his technical training does not stand in opposition to, but is rather a part of, a "liberal" education. But his work is only one side of his life. Even in maturity, given the right conditions, he may acquire new forms of skill and leisure occupations, and learn to appreciate new expressions of beauty. He may add to his knowledge of the physical universe, of living organisms, and of his fellow-men. He may gain a deeper understanding of his duties as parent or citizen. He may extend his knowledge of local government, social, political, and international problems. He may develop a more adequate philosophy of life, and achieve a higher standard of conduct.

An educational institution which is properly adjusted to this period will take account of these various possibilities of individual development. It will make provision for all of them, and not aim solely at teaching a man his job. Many Technical and Commercial Schools have concentrated too exclusively on special techniques; they have been too much influenced by the needs of industry, and too little by the needs of individuals. On the other hand, the Workers' Educational Association has tended to underestimate the strength of the vocational drive, as indeed it has also of the parental impulse; and it has therefore neglected two of the natural means of "liberal" education in maturity.

The psychological facts so far considered seem to support the general policy for liberalizing technical education, which was recommended by Lord Eustace Percy.¹ He advocated that there should be developed "local colleges," in which Schools of Technology, Commerce, and Art could be linked together, and to which other part-time adult educational work of a non-vocational character could be attached. Such a College, with its broader provision for liberal (including technical) education, would certainly have a much greater power of developing a corporate life of its own than an ordinary Technical College, even if it were limited to part-time students. According to Lord Eustace Percy, in a reorganized system of education, it would stand in a relationship to the Central, Senior and Junior Technical Schools in its area similar to that which at present exists between a University and the Secondary Schools.

The chief difficulties inherent in this scheme are obvious. There is first the possibility of the discouragement of some of the most valuable educational work which is going on at present in rural areas, far removed from cities and large towns, which alone could hope for the development of federated centres of learning of the kind just described. There is also the danger that the essentially voluntary nature of adult education might be disregarded in Colleges, where there would be boys and girls in attendance from the age of 15 or even earlier, and for which Local Education Authorities would be directly responsible. These difficulties are not insurmountable, but they suggest the need for definite safeguards, and possibly for the continuation of University Tutorial Classes under the management of Universities.

Lord Eustace Percy's plea for more systematic co-

¹ *Education at the Cross Roads*, 1930.

operation between Universities and Technical Colleges is undoubtedly to be welcomed. In the main he appears to make the line of delimitation between their functions depend on the distinction between whole-time and part-time studies. Unfortunately, he does not face the crucial problem of the principles which should govern the selection of students for full-time University education or for part-time "Local College" courses.

There are various alternative methods of selection which might be adopted. Since a full-time University course costs so much, it might be reserved for the sons and daughters of parents who can afford to pay the full cost. This method is entirely inappropriate to a nation which prides itself on its democratic form of government, and it has indeed already been rejected in this country, where Exchequer and Board of Education grants and Local Education Authority contributions are paid to Universities, and where there are many scholarship awards made out of public funds. Another alternative view that full-time University training is only necessary for entrance to the "learned" professions, such as medicine, law, the Church, politics, and University and possibly Secondary School teaching, and not as a preparation for the higher posts in industry and commerce, has also been outgrown. Obviously a proportion of original and well-trained minds are just as much needed to-day in business, engineering, building, mining, and Elementary School teaching as they are in the older "learned" professions. The major function of a University, if it is to live up to its ideal of universality, is the training of students to carry on in the highest adventures of thought and action of the community to which they belong. The recent development of modern science and particularly

of the biological and applied sciences, the growth of industry and commerce, the birth of internationalism, and the beginnings of a new morality have naturally resulted in the opening up of new fields of adventure to the human race, of which Universities must now surely take account.

According to Dr. Cyril Burt, general intelligence is the most significant of all psychological capacities for the purpose of vocational guidance. He classifies adults into groups, according to their mental ratios corresponding to the grade of work for which they are suitable. In his opinion, the members of the highest grade, with I.Q.s of over 150 per cent., are generally fitted to follow the higher professional careers or to hold administrative posts either in business or in the service of the State. He calculates that roughly .1 per cent. of the population falls into this category and 3 per cent. into the next grade, with I.Q.s of over 130 per cent.¹

In a democracy there is a strong case for selecting the students who are to continue their full-time education in Universities on purely psychological grounds, without distinction of creed or social class, riches or poverty. The unusually gifted members of the late adolescent age-groups—those that fall within Burt's two highest categories—are the most likely to profit by the "pure and clear atmosphere of thought" in Universities. They will be able to perceive the multiple relations between the various departments of knowledge. They will be capable of the imaginative consideration of learning and may consequently be able to make original contributions to human life and thought.

¹ C. Burt, "The Principles of Vocational Guidance," *British Journal of Psychology*, Vol. XIV, pp. 347-9.

If the level of native ability of University students falls below this standard, there is a real danger that the Universities will fail to fulfil their special functions. It was probably on this score that the University Grants Committee recently expressed the opinion that "a reduction in the number admitted to our University Institutions is preferable to a reduction in the standard of the education which they provide."

Temperamental qualities, and especially the general factor which has been described as "persistency of motives,"¹ are also important in enabling individuals to justify themselves in University life and indeed in the vocations which they afterwards adopt. This suggests that the use of intelligence tests, even when they have passed the tentative stage in which those for highly gifted adults are at present, would need to be supplemented by the consideration of school achievements in the selection of entrants to Universities. For the present, notwithstanding the recent criticisms of examinations, educational attainments must remain the chief factor in determining suitability for continuing full-time education beyond the Secondary School stage.

Even at present, however, the psychological approach to the consideration of the problem of University entrance is likely to prove useful. In the first place it throws light on the question of the *optimum* number of University students, for whom provision should be made, in proportion to the total population. According to recent surveys by the use of mental tests, the proportion of highly gifted individuals, say, those whose I.Q.s exceed 130 per cent., is not likely to be much more than 3 per cent. of their age-

¹ See pp. 192-6.

groups.¹ Professor Major Greenwood has recently reported to the Royal Statistical Society the results of his calculations concerning the actual proportion of University-trained men to the total population of England. Although the proportion is undoubtedly higher in Scotland and Wales, he estimates that only about 2 per cent. of the male population of England now have a University education.² As only about one-quarter of the students in Universities are women, it follows that the proportion of women who have a University education is considerably smaller. The danger of exceeding the *optimum* number of University students in this country, for whom on psychological grounds provision should be made, is therefore not serious at the present time, though it must be admitted that two problems contingent on the recent expansion of University education, namely, the adequate staffing in the newer Universities in relation to the number of students and the finding of suitable avenues of employment for University graduates after the completion of their courses, are at present far from being solved.

Psychological considerations lead also to certain lines of criticism of the present Matriculation requirements and of the absurd practice of using Matriculation for other purposes than that of entrance to Universities. Whatever methods of selection of University students be adopted in the future—whether by mental tests, examinations, school records or interviews, or by any combination of these—the underlying objective is perfectly clear. It is to discover, among the total number of individuals who are entering on the period of late adolescence, those who are specially

¹ See Diagram 4, p. 188.

² *Presidential Address*, Royal Statistical Society, 1934.

gifted, and who should therefore proceed to Universities to continue their training until about the age of 21 or even later, in order that they may be enabled to serve the community in accordance with their exceptional ability.

It must be admitted that the existing system of Matriculation is not well adapted to this end. At present the minimum requirement for entrance into a University may be satisfied in one of two ways: either by passing at school the First School-Leaving Certificate examination with a sufficient number of "credits" in required subjects; or by passing the Matriculation examination (ordinary or "mature age") of one of the Universities.

The First School-Leaving Certificate is usually taken by pupils at 15 or 16 years of age; and its association with University requirements not only encourages over-pressure but also tends to produce an undesirable uniformity of curriculum in the Secondary Schools. It has also led to the absurd practice, for which the final responsibility must rest with educationists, whereby employers and others making appointments to relatively routine occupations demand Matriculation, or its equivalent, when they are recruiting from boys and girls who have not the slightest intention of proceeding to a University.

The retention of the present system of Matriculation, which was suitable to the earlier period before the Secondary School system had developed, is also preventing the Universities, or at least the regional Universities, from fulfilling their true functions. In actual practice in recent years, most of the pupils who intend to proceed to Universities stay on at school for an additional two, or even three, years after Matriculation, and work for the Higher (or Second School-Leaving) Certificate. Scholarships are awarded

either on this examination or on specially conducted University examinations of at least this standard. The result is that now the majority of entrants to Universities are admitted at about the age of 18, after obtaining the Higher Certificate and some two years after they have reached "Matriculation" standard. The students who continue to come in on minimum Matriculation requirements are largely those whose parents can afford to pay the full fees for a University education on their behalf, or those to whom certain societies and Local Education Authorities award grants or loans on grounds of financial need. If these have had the usual facilities for secondary education and have only reached minimum Matriculation requirements at the age of 17, whereas others reach it at 15 or 16, it is highly improbable that they will belong to the group of exceptionally gifted individuals. Their admission to a University cannot therefore be justified on psychological grounds; and their presence necessitates the provision in the University of elementary courses suitable to the Secondary School. There will of course be some who through lack of opportunity have not proceeded to, or remained in, a Secondary School for the full course; and among these there may be a few who are exceptionally gifted. Special provision will need to be made for them, whatever changes may be desirable in the general system.

The remedy for the present Matriculation anomalies is fairly obvious. The normal requirement for entry into a University should now be the possession of a First School-Leaving Certificate, freed from all special University requirements, supplemented by a Second School-Leaving Certificate, but one not so highly specialized as the present Higher Certificate. A special University examination of

similar standard to the modified Higher Certificate will also need to be retained for candidates who are not able to satisfy these requirements. For some considerable time University teachers have advocated a change in this direction; and the Northern Universities Joint Matriculation Board is about to experiment on a scheme of this general nature.

In addition to improving the selection of entrants into Universities, the adoption of such a scheme will mean that the First School-Leaving Certificate (taken at the age of 15 or 16) will be free of all University entanglements; and consequently the work of the first four years of the Secondary School course can be more easily adjusted to the needs and interests of various individuals, and especially of individuals who are not proceeding to Universities. There will also be less overlapping between first-year work in Universities and sixth-form work in Secondary Schools. In time University teachers will be relieved of the elementary (Intermediate) work, which now often prevents their giving as much time as they should to their research students, and to their own investigations. Only about 5 per cent.¹ of the full-time students in British Universities are doing work beyond the initial degree and diploma stage. In German and American Universities the proportion is much higher; and there can be no doubt that British Universities still fall short in regard to the sums at their disposal for advanced work. They are therefore not at present fulfilling their research functions as adequately as they are discharging their teaching duties.

¹ In 1934-5 the actual number of advanced students in Great Britain was 2,866 out of a total of 50,638 full-time University students. (*Report of University Grants Committee, 1936, Tables 1 and 3.*)

The association of a modified four-subject Higher Certificate with minimum University entrance requirements would mean that the present system of exemptions from first-year University work would disappear. Pass and general honours degree schemes, extending over three years from this stage, and conceived on broad lines, might become more usual; and the existing tendency towards over-specialization would thus be checked.

Professor Ernest Barker rightly deplores this tendency towards narrowness, and on this account is afraid of blurring the distinction between the University and the Technical College.¹ But it must be admitted that over-specialization is not limited to Technical Colleges; it exists also in Universities, in the Faculty of Science, as well as of Applied Science, whenever the results of particular branches of Science are taught without due regard to the generality of scientific method. It may even be found in the Faculty of Arts, for example, in language studies, where the emphasis is laid on grammar and technique rather than on literature and thought.

The real danger to a University lies not in the inclusion of technical studies, without which strictly speaking it cannot claim universality, but in a narrowness of outlook and a resulting lack of co-ordination between the related parts, which may occur, whether the emphasis be literary, scientific, or technical. Highly specialist *ad hoc* courses, such as practical poultry raising, marketing methods, and typewriting, which are found in some American Universities, are certainly indefensible; but courses in architecture, engineering, and commerce, broadly conceived, may be truly liberal. Flexner is perfectly justified in his objections

¹ E. Barker, *Universities in Great Britain*, 1931, p. 81.

to "*ad-hoc*-ness." "Atomistic training," he says, "the provision of endless special courses, instead of a small number of opportunities that are at once broad and deep—is hostile to the development of intellectual grasp."¹ But he is unduly influenced by tradition when he objects also to the inclusion of agriculture, domestic science, and education in the curriculum of a University. If the applied science of engineering or the art of medicine is suitable as the pivot of a degree scheme, it is difficult to see why education, which may relate the biological, psychological, and social sciences, the history and philosophy of human evolution, with work of vital importance to the community, should be denied similar recognition.

In the past the Universities have trained the intellectual pioneers of our civilization. The conduct of business, the planning of industry, the practice of education and the understanding of international problems now require intellectual imagination of the same quality as that which in former times passed into those other occupations. It is therefore important that there should be a widening of provision in the modern University to include studies of these newer adventures of thought and action. Such departments as Engineering, Mining, Commerce, Architecture, Education, Industrial Relations, and International Relations, are justifiable in a University, provided that study in them involves a real discipline in the art of thought, and gives opportunities for the kind of enlargement of mind which Newman defined as "the power of viewing many things at once as one whole." The one essential is that any course in a University, whatever its centre may be, should be planned on broad lines; and should concern

¹ A. Flexner, *Universities, American, English, German*, 1930, p. 100.

itself with relationships, general principles, and long-time values, rather than with *ad hoc* interests, special techniques, and quick returns. In other words, it should be appropriate to the period of late adolescence, which is usually characterized by the search for a philosophy of life; and to the exceptionally intelligent members of these age-groups, who are distinguished by their greater power of perceiving manifold relations.

"Philosophy and universality," says Professor Ernest Barker, "remain the Alpha and Omega of the British Universities."¹ Philosophy and universality, with freedom, should remain their characteristic features, even when they have adjusted themselves more adequately to the living present. I add freedom, because it is so vitally connected with the preservation of a high standard of scholarship.

The University Grants Committee, which is responsible for the allocation of Treasury grants to British Universities, makes a visitation to, as distinguished from an inspection of, Universities once in five years. The danger of any interference from the State with the freedom of Universities certainly seems remote; but there are signs which suggest that the danger of attempted interference by Local Education Authorities is much less remote. This is not due to any lack of goodwill, but to the generally accepted belief that "he who pays the piper should call the tune." It is not always realized what the special functions of a University are; nor what are the conditions under which they have the best chance of being fulfilled. Creative thought, like the Spirit, bloweth when and where it listeth. Adventures of the mind, research work, and the imaginative consideration of learning, do

¹ *Universities of Great Britain*, 1931, p. 82.

not flourish under restrictions and regulations, any more than the exploration of untrodden countries could proceed by schedule and fixed time-table. On this account Universities cannot be dealt with according to the rules and policies which apply to big business. While the greatest care should be taken over the appointment of University professors and lecturers, the public opinion of the staff and their common zeal for the purposes of the University form the only effective safeguards for the high level of University work. Certain requirements in regard to lectures and attendance may be laid down, but the heart of the matter lies beyond all regulation. "The University," says Professor Barker, "like the Church, lives by the Spirit; and for the cultivation of the things of the Spirit; and like all other spiritual institutions it must always be judged, in the last resort, by the degree to which it performs its own intimate and essential purpose."¹

¹ *Universities of Great Britain*, 1931, p. 83.

CHAPTER XVIII

THE CHANGING CURRICULUM

IN considering the problem of the curriculum and attempting to assess the various changes now being recommended, there appear to be two new educational commandments, two major principles, the joint application of which will provide sound criteria of educational value.

First, *appreciate the living present*. Seek to understand the now active thrust in the process of evolution and so order the content of the curriculum that each individual may have a fair chance to adjust himself or herself to the living present.

Secondly, *respect each individual* who is to be educated. Do no violence to his (or her) nature. Study his stage of development, his abilities and attainments; and by providing adequate opportunities for the expression of his interests, make it possible for him to develop all his powers. In this way, and by adjustment to the living present, he will be enabled to live abundantly, and to play his full part in existing society and in the further evolution of human life and organizations.

The one cultural change which is most widely and profoundly affecting modern civilization is undoubtedly the development of the various branches of science and of the scientific method of invention.¹ It was not long before it was realized that this significant feature of the living pre-

¹ See Chap. II.

sent should modify the content of the curriculum. Even in the nineteenth century men like Herbert Spencer and T. H. Huxley fought a great battle against tradition for the inclusion of a study of the sciences in a "liberal" education. "Education," says Huxley, "is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws. For me, education means neither more nor less than this. Anything which professes to call itself education must be tried by this standard, and if it fails to stand the test, I will not call it education, whatever may be the force of authority, or of numbers, upon the other side."¹

The work of such pioneers as T. H. Huxley has been crowned with a large measure of success. The scientific movement of thought has already affected the curricula of most Secondary Schools, disturbing the narrow classical tradition of the older Public Schools, and introducing new subjects of study, such as physics and chemistry, and more recently, geography and the biological sciences, at the Secondary School stage. There is also increased provision for the teaching of both the pure and applied sciences, and for scientific research in the older and newer Universities. But although the changes appear to have been in the right direction, they have not yet gone far enough.

There are still Elementary Schools in areas where "re-organization" has not been effected, in which there is no suitable provision either in staffing or accommodation for the teaching of elementary science. Some children leaving

¹ T. H. Huxley, "A Liberal Education," *Science and Education*, 1893 (1910 Edition), p. 83.

these schools do not pass on to any form of post-primary education. They are therefore sent out, without any scientific training, even of the most elementary kind, to adjust themselves to a world in which most forms of work and leisure occupations are dependent on the applied sciences.

There are also Public Schools where there is an early division into sides, on some of which it is possible for boys to miss all serious and continuous study of the sciences, through specialization on classical or other literary studies. There are boys' Secondary Schools, which make no provision for the teaching of biology and where scientific education is so lop-sided that it is likely to lead to a narrow and mechanistic view of the Universe. There are girls' Secondary Schools where provision for the teaching of the physical sciences is inadequate.

There are Universities which, through lack of financial resources or from other causes, have failed to make provision for the newer sciences, and have virtually denied their own ideal of universality. Thus, while Cambridge, London, Manchester, Edinburgh, and Glasgow have recognized the importance of the youngest science—psychology—by appointing professors and/or lecturers, and equipping psychological laboratories, Oxford and most of the remaining regional Universities lag behind in providing facilities for the study of this science which is going to contribute so much to human life in the near future.

The whole question of the kind of preliminary training in the early stages in Infant and Junior Schools, which is likely to foster a scientific attitude in later life, has so far received little consideration ; and the problem of adjusting scientific education to different stages of development and

different types of individuals is also far from being solved.

It has already been shown how the widespread application of science to industry, agriculture, commerce and home-management has tended to make the work in which the majority of individuals are now employed more specialized, and has consequently increased their need for technical training. Already in this country, Technical Colleges, Junior Technical Schools, and Trade Schools are springing up ; but it is the general effect on the content of the curriculum with which we are here specially concerned. Selective Central and some Secondary Schools are experimenting with courses having a bias in the later years towards vocational training of various kinds. Provision for domestic science work for girls is now usual in Central and Senior, as well as in Secondary Schools, in areas where "reorganization" has been effected. There are also Faculties of Applied Science, Commerce, and Technology in Universities. All these experiments and modifications indicate a revolt against the traditional "bookish" education of the past, and a desire to find means of adjusting education to the conditions of the modern world. They illustrate a general tendency to broaden the meaning of "liberal" education to include "technical" and scientific, as well as literary, studies.

America has been less hampered by tradition than this country in attempting to adjust education to the living present. There have been numerous experiments like the famous Gary schools, where education has centred round purposeful activities rather than traditional subjects of study, and where industries have been taken into the schools in order that pupils might be delivered from the unreality of a merely academic education. In such schools

the children are engaged in various occupations, such as the repairing and manufacture of school equipment, the cooking of their own meals, and the printing of the notices that it is desired to send to their parents or other friends of the school. The underlying idea is to utilize various forms of occupation, typifying social callings, and to bring out their intellectual and moral content.

"This reconstruction," says Professor Dewey, "must relegate purely literary methods—including textbooks—and dialectical methods to the position of necessary auxiliary tools in the intelligent development of consecutive and cumulative activities."¹ The training given in these schools is not narrowly vocational; the pupils try various occupations, none of which they may eventually follow, just as children play at being tram-conductors, gardeners, and teachers. "The ideal," says Dewey, "is not to use the schools as tools of existing industrial systems, but to use industry for the reorganization of the schools . . . to give practical value to the theoretical knowledge that every pupil should have, and to give him an understanding of the conditions and institutions of his environment."²

The Dewey School of American educationists have undoubtedly made valuable contributions to the solution of the problem of adjusting education to the conditions of *work* in modern life; but it is doubtful whether they have sufficiently recognized the significance for education of the increased *leisure*, which is also a feature of modern life. The education of the future must be for leisure as well as for work; and consequently even the broad kind of occupational training advocated by Dewey does not meet

¹ J. Dewey, *Democracy and Education*, 1916, p. 369.

² J. and E. Dewey, *Schools of Tomorrow*, 1915, p. 311-12.

all the new circumstances. There must be a very special place assigned to the arts and crafts, to music and literature, to poetry and the drama, and to games and athletics, in order that individuals may be prepared for the right use of their leisure.

The immediate need of the community may be for a large number of skilled workmen, of technically trained men with inventive genius, and of employers alert to avail themselves of new ideas; though the present unemployment figures do not emphasize the need for the skilled workmen. But in all probability, the more completely industry is rationalized, the greater will be the leisure opportunities of the workers, and the more urgent it becomes that they should be educated for thought and æsthetic appreciation, for joyous activity in leisure, as well as for efficiency in work. It is being increasingly realized that after all industry was made for man, and not man for industry; and consequently the worker's possession of leisure for self-expression and free activity, and for the fulfilment of his functions as parent and/or citizen, should not be regarded as a lucky accident, but as his recognized right after labour.

In the present tendency to emphasize the importance of technical education there lurks the very real danger of bifurcating education into two kinds, technical and "liberal," for two social classes. The first kind of education may be inspired by the Benedictine ideal of work—no mean conception—and the second may imply the Platonic ideal of pleasurable and disinterested mental activity—a view which in the past has rendered invaluable services to European civilization. The danger lies not in either conception, but in their separation, at a time when workers

have leisure and all have responsibilities in a democracy. What is needed to-day is that the false antithesis between technical and "liberal" education should be broken down, and that each individual, according to his gifts, should receive a training for work and for leisure. He or she should enjoy a truly liberal education, including technical, as well as literary and scientific, studies. Narrowly vocational education cannot be justified for any social class in a democracy; still less can it be tolerated in the pre-adolescent stages of an individual's life, before vocational interests develop and before mental powers can be properly assessed. This does not mean that education centring round various purposeful activities and providing a natural introduction to the understanding of modern occupations and professions is not to be encouraged; but specialized training for a particular job is certainly inappropriate at this stage.

The view that human beings are so much fodder for industry, and that boys and girls should be educated accordingly, can only be maintained by a complete disregard of all the other outstanding developments of the living present except that of modern industry. Yet there are practically minded individuals who advocate allowing this one feature, or even worse, local conditions pertaining thereto, to determine the main-lines of the curriculum. Of course, an intelligent teacher will naturally be constantly influenced in his illustrations and his selection of material by the local conditions of his pupils; but this immediate environment should never determine his objectives, for the environment actually operative in influencing the pupils living in one neighbourhood, attending one school, and even brought up in one family, varies with their abilities

and interests. In a very real sense, the environment of every child is the whole Universe, the living present. Not only the physical world, but the worlds of science, art, music, literature, and philosophy, the movements of human history, and the life and aspirations of the community or communities of which he feels himself to be a member, belong to him, if he has the power and desire to appropriate them. Every human being has the right to a *personal culture*, as well as to a *vocational training*; to the possibility of physical, intellectual, and artistic enjoyment in leisure, as well as of technical proficiency in work.

The two most significant social developments to which the members of this nation need to adjust themselves have already been shown to be a democratic form of government and a growing internationalism.¹ In a democracy all normal adults have the full responsibilities of citizenship; and they need therefore to be educated for freedom, service, and the understanding of national and international problems. It will no longer suffice for *some* to be educated for domination and *others* for obedience; *all* must be educated to fulfil their functions as responsible citizens in a democratic state in a world community.

Sir Ernest Simon has recently summed up the qualities which in his opinion the good citizen of a democratic state should have, in the following threefold division:

(1) A deep concern for the freedom and good life of his fellows.

(2) Such knowledge and power of clear thinking as will enable him to form sound judgments as to the main problems of politics and to decide wisely which party will be most likely to achieve the ends he desires.

¹ See Chap. III.

(3) The power to select men of wisdom, integrity, and courage as public representatives, and such knowledge of his own limitations as will dispose him to trust and follow his chosen leaders.¹

Mr. H. G. Wells's view that the informative framework of a proper education should consist of Biology, History, and Descriptive Economics and Politics, is undoubtedly suggested by the outstanding social developments of the living present, though it may need some modification when the problem of the curriculum is examined from the other end, the nature of the human individuals to be educated. "A child should begin," said Mr. Wells, "with Natural History, a History of Inventions, Social Beginnings and Descriptive Geography, that should constitute its first world picture, and the treatment of these subjects should broaden and intensify before specialization. I believe that minds resting on that triple foundation will be equipped for the rôle of world citizens, and I do not believe that a world community can be held together in a common understanding except upon such a foundation."²

The most important general point which emerges from the consideration of the living present is the need for emphasizing the social and moral aspects of education. The increased material resources now in the hands of man through the growth of modern science, the greater leisure which is foreshadowed by the rationalization of modern industry, the added power of the individual to influence the well-being of society through trade or professional organization, and the responsibilities of citizenship in a democratic community make it more than ever necessary

¹ *Education for Citizenship in Secondary Schools*, 1936, pp. 9-10.

² H. G. Wells, *Experiment in Autobiography*, 1934, pp. 723-4.

that education should be more than vocational, or even intellectual, training. It must also be a training of the emotions and sentiments, of the foundations of character, whether conscious or unconscious. By extending the individual's powers and his social responsibilities modern conditions have increased his potentialities both for good and evil. The chief emphasis in all forms and stages of education must therefore be placed on the training of character and on the development of an adequate ethical code and system of values.

So far the problems of the curriculum have been considered mainly from one end, that of the living present, to which individuals must adjust themselves. The second educational principle, "Respect each individual," should also be applied in any serious attempt to assess the value of the suggested changes. For example, Mr. Wells's "informative framework of a proper education"—namely, Biology, History, and Descriptive Economics and Politics—presupposes that a certain stage of development has already been reached by the living individual or individuals for whom the framework was devised. Before an infant has learned to use his senses and to control his movements, before he has acquired sufficient knowledge of animate and inanimate objects to draw a rough distinction between them, biology means nothing to him. Until he has acquired a working knowledge of his native language and has learned to adjust himself to, and to communicate with, the members of his family circle, history also can have no meaning. It is not until adolescence, when the individual begins to be interested in social problems and after he has attained to considerable powers of abstraction, that the

study of Economics and Politics really becomes possible. In deciding on a suitable curriculum, the stage of development of the living individuals must then be taken into account as well as the general objective regarded as desirable. More than this : the many-sidedness and continuity of the growth of living individuals, their native abilities, and their present interests and attainments need also to be considered in deciding what is an appropriate curriculum.

In recent years there has been a noticeable tendency to adjust the curriculum more exactly to the living individuals who are being educated. In this country it is most clearly evident in Nursery Schools and Kindergartens and in the newer Central Schools. It has already had the general result of reinforcing the break with tradition suggested by the rise of modern science, and which might be described on its positive side as a recognition of the essential place of first-hand experience and purposive activities in the educational process, and on its negative side as a revolt against verbalism and the narrow book-learning conception of education.

The practice in Nursery Schools and in some of the more progressive Infant Schools of deferring formal work in the three R's until considerably later than was usual in this country in the past in order to make room for first-hand study of the real world and for many and varied forms of expression work is psychologically sound. If a living individual is a body-mind, and if throughout development is many-sided, and the physical, cognitive, feeling, and conative aspects of experience are closely inter-related,¹ the traditional academic view of education with its mistaken emphasis on *words* cannot be justified from the human end,

¹ See pp. 88-9.

any more than slavery to the printing-press can now be regarded as necessary from the environment side, in view of the many other important inventions which have profoundly affected the modern world.

Infancy is pre-eminently a period for gaining control of the appetites and instincts, and for learning to see, hear, touch, move, and judge of incoming sensations.¹ After the indirect training of character, which is so important at this stage, the chief emphasis should be laid on the training of the senses, the learning of the *spoken* language, and on the providing of opportunities for the active exploration of the real world. Modern psychological opinion tends to the conclusion that the formal teaching of reading and writing, that is, of the *written* language, should be deferred until 6 or even later, not only because of the many-sidedness of development, but also in order to avoid the fatal error, from a purely intellectual point of view, of substituting second-hand information for first-hand experience.

"Words are the counters of wise men but the money of fools," said Thomas Hobbes. Whenever language out-runs experience, words tend to be used as "money" rather than as "counters." At this early stage, when first-hand experience is so slight, the divorce of language from practical activities is not calculated to develop the art of thought; and any forced learning of reading and writing before a child feels a need for this form of language is certain to lead to boredom, and may very well lead to confused thinking and verbalism.

At the Junior School stage, most children are intensely interested in the real world, but they also take kindly to routine work in reading, writing, and arithmetic.² These

¹ See Chap. VII.

² See Chap. VIII.

tool subjects which will later open up new worlds to them should be emphasized, though they should still not be divorced from the active exploration of the real world. If the best possible conditions for physical health and mental development are to be maintained, there must be greater emphasis on physical education and the acquiring of skills than has been usual in the past. The centre of gravity of the curriculum should still remain in purposive occupations, involving physical activity, giving scope for such varied mental processes as observation, invention, judgment, and reasoning, and providing opportunities for the use of language and for social training. While some Elementary School teachers have moved on towards a practical recognition of the importance of physical exercise, craft work, and first-hand observations in Nature study and geography, there are still many who are so obsessed by a fear of illiteracy, that they fail to notice the much graver danger of damage to mind and body through over-pressure and the forestalling of natural development.

The buildings and equipment of Elementary Schools indirectly show how lop-sided and biased towards verbalism the official curriculum still is ; and how difficult it is for teachers who are aware of the need to break away from the earlier "clerkly" tradition. What would be said of a Junior School which had no books or writing materials provided ? Yet there is little stir when children are cooped up in an ugly building, more like a jail or a barracks than a microcosm of the real world, without garden, farm, field, museum, workshop, or kitchen attached, and almost entirely empty of plants and animals, pictures, and other interesting objects, with the single exception of books. When such a school is compared with one of the famous

Gary schools in America, with its loom, printing-press, and carpenter's bench, its kitchen, engine-room, and workshops, it has to be admitted that elementary education in this country is still largely held in subjection to a written examination system; and is neither adjusted to suit the characteristic developments of childhood, nor to introduce the pupils to the chief features of the living present.

In order that children may be prepared to adjust themselves to the modern world, it is necessary at this stage that they should continue to learn something of the properties of tools and other objects in common use, of natural history, the history of inventions, and of descriptive geography, as well as of the arts of reading, writing, and arithmetic. They should not learn only from books and the teacher's words, but by direct observation and practical experience, in handwork, on expeditions, in museum and garden, and with the aid of the cinema. The time has surely come to discard the traditional idea that the practice of a craft is somehow not intellectually respectable. Rightly taught, it provides opportunities for creative thinking, particularly suitable to this stage. Many a child who appears dull is often surprisingly intelligent in the pursuit of some practical project in which he is genuinely interested, such as the making of a wireless set. He finds means of accumulating the necessary information from books: he shows powers of concentration, invention, and continuous thought, out of all proportion to those which he manifests in mere book-learning unrelated to such a project.

In the next stage of early adolescence,¹ there tends to be a growing interest in language and forms of thought, and there often develops a passion for reading. This is es-

¹ See pp. 143-4.

pecially noticeable in the more highly intelligent members of the group ; but even in their case it is accompanied by other characteristic developments, which should not be ignored in deciding on the general lines of an appropriate curriculum. On the physical side there is great rapidity of growth ; and there are also profound physiological changes, which centre round the maturing of the sex-functions. On the intellectual side there is not only a marked development of literary and humanistic interests, but there is a generally increased power of abstraction, which may lead to a deeper interest in mathematical and scientific studies or in social, political, or even philosophical problems.

There are also emotional changes characteristic of the period which bring with them new educational opportunities. The strong desire to find a vocation and the growing need for psychological and economic independence suggest the appropriateness of vocational guidance and preliminary training for future work. The rise or intensification of sexual emotions tends to increase the earlier interest in living organisms and biological problems. The deepening and broadening of the social emotions is associated with a new regard for the well-being of others and an increased interest in social, national, and international questions. The parallel development of æsthetic and religious emotions may mean the re-orientation of the whole feeling life away from the self and towards a spiritual universe or a moral order of which the individual now becomes more fully aware.

What, then, is the curriculum indicated by these characteristic features of early adolescence ? The facts of physical development suggest that, whatever else is left out,

physical education and games must occupy an important place in the curriculum for adolescents. Secondly, the practice of at least one art or craft is desirable for the joint exercise of mind and body ; for keeping individuals, who are inclined to indulge in fantasy, in close relationship with the real world ; and for the training of the æsthetic emotions and the education of taste. There should be a variety of provision for handicrafts, so that each individual may become acquainted with and learn to appreciate the chief arts in which man's creativeness has expressed itself, and may find a form or forms of expression suited to his particular needs. Thirdly, there should be general elementary science and hygiene, and especially Nature study and biology, so that the adolescent may understand something of the laws of Nature and of the modern conditions under which he must play his part in later life. Lastly, there should be a related group of humanistic studies, including the language and literature and the history and geography of the home country in relationship to world history and geography. What is needed is not a long list of separate subjects—English, History, Geography, Civics, and Economics—but a study of human evolution which will illuminate the problems which at present confront the citizens of a democracy in a world community. These, together with the general moral training in which all subjects and all activities in the life of the school play their part, appear to be the essential foundations, the irreducible minimum of a balanced curriculum suitable for early adolescence.

Adolescents differ widely in regard to general intelligence, special abilities, educational attainments, and vocational ambitions ; and the same curriculum is therefore not suitable for all, or even the majority of, individuals passing

through this period. Those with greater intelligence and greater powers of abstraction are naturally able to profit by a wider course and more specialist studies than those with less general ability. To the irreducible minimum of essentials (1, physical and recreational ; 2, artistic and practical ; 3, scientific and biological ; 4, humanistic and historical ; and 5, moral and religious) there should therefore be added variables—that is, optional subjects and occupations—selected according to the varying abilities and interests of the adolescents for whom provision has to be made.

There is, however, no psychological case for the total omission of any of the foundational groups of studies during early adolescence, nor of the fifth essential, moral and religious training. The danger which continually threatens Junior Technical Schools is not unlike that which menaces Grammar Schools. The emphasis on vocational instruction and technical training leads to the addition of many subjects and occupations, perhaps of mathematics, machine drawing, and the applied (physical) sciences, or of modern languages and commercial subjects ; and one or other of the essential sides of the adolescent curriculum may thus be entirely eliminated. The academic bias of the Grammar School tends to a similar overcrowding of the curriculum and may result in the substitution of “cognate” academic subjects for one of the foundational studies necessary for the many-sided development of the individual. In both cases, though from different causes, there may result a disturbance in the balance of the curriculum and a consequent failure to educate for life, with all its manifold responsibilities.

In a reorganized system of education the necessary

differentiation of curricula for adolescents of varying abilities and interests will be effected mainly by the provision of different kinds of schools for roughly different types of adolescents. The Hadow Report recommended the provision of three chief kinds of post-primary schools—namely, Grammar, Selective Central, and Senior Schools.¹

The Senior School is intended for pupils of average or less than average ability, who are experiencing the characteristic changes of early adolescence and whose need for an appropriate education is therefore not less urgent than that of other adolescents with greater intellectual ability. Its curriculum should be simpler and lighter than that usual for the corresponding age-groups in the Secondary (Grammar) Schools. It is doubtful whether it should include any compulsory subjects other than the four foundational groups, suggested by the chief developments characteristic of the period; though individuals might very well add some additional occupation or study of their own choosing.

In the Selective Central School, designed for pupils with greater general ability and with predominantly practical interests, other sciences and crafts and possibly a second language may also be taught. Towards the end of a four years' course, studies with a vocational bias may with advantage be introduced, though the curriculum should remain "liberal"—that is, a balance should be preserved between the four foundational groups.

In Grammar Schools intended for pupils with considerable general intelligence and with predominantly academic interests, the curriculum should be wider, including more languages and sciences; but again the essential divisions of the minimum curriculum should be retained until the

¹ See Chap. XVI, pp. 261-2.

end of the period of early adolescence—that is, until the First School-Leaving Certificate stage.

Constant care must be taken to guard against the ever-present danger of an overcrowded curriculum. Each specialist thinks his subject of supreme importance and presses for its inclusion. The classical scholar, who appreciates the humanistic and disciplinary value of the Classics, regards Latin, and in some cases Greek, as essential, notwithstanding the new features of the living present and the consequent need for including scientific studies in the curriculum. The biology specialist not only maintains the necessity for including his subject but also argues that it is impossible to teach Biology without Physics and Chemistry; the physicist must have Mathematics. The modern language enthusiast pleads for the inclusion of German, Spanish, Italian, and French, as well as English. Many of those who are at present urging the need for education for citizenship in Secondary Schools press for the addition of Economics and Civics to the History-Geography group. The result is that too many separate subjects are taught, and the curriculum becomes burdensome. The Secondary School pupil is frequently overworked; his homework is excessive; and he gains examination successes at the expense of bodily fitness, power of thought, or sociability. He is often driven to mere memorizing, having neither time nor energy for creative thought, or for perceiving the manifold relations between subjects.

The present examination system, and especially the Matriculation bogey, is responsible for many cases of overpressure and unbalanced development of mind and body. It all too frequently leads to the partial neglect of physical and artistic education and of the acquiring of skills. The

result is excessive verbalism and confusion of thought ; a failure in intellectual, as well as emotional, development. The freeing of the First School-Leaving Certificate from association with Matriculation requirements, which is now contemplated, would at least give Secondary School teachers a chance to experiment with the curriculum and possibly to adjust it more accurately to the needs of adolescents and to the living present. Whether they will be able to seize the new opportunity or not will depend largely on their willingness and ability to view the whole problem of the Secondary School curriculum from the *human*, as opposed to the *subjects*, end.

Experiments will certainly be necessary in the grouping of subjects so that the burden of the present curriculum may be reduced ; and in systems of options so that a balance between the four essential groups may be preserved. Thus the teaching of the sciences is at present too specialized to be suitable for the adolescent stage. Instead of the separate sciences, Physics, Chemistry, Botany, and Zoology, a four years' course in general science, including both physical and biological studies, needs to be devised. This would lead naturally to more specialized studies at the Higher Certificate and subsequent stages for those continuing their work along this line. Experiments in the teaching of School Certificate general science have not so far been so successful as might have been expected, mainly because most of the teachers responsible are themselves specialists in Physics, Chemistry, Botany, or Zoology, and have not been willing to fling overboard much of the material which was formerly regarded as necessary in the separate subjects taken singly. When there are at work in the Secondary Schools more science graduates, with "general honours" degrees, who

have also been trained to observe and understand their pupils, some working synthesis of scientific studies may be effected which will go a long way to reduce the danger of overpressure in this direction.

It is usually in the humanistic studies that there is the gravest danger of overcrowding in Grammar Schools. But experiments are beginning to be tried out in the grouping of some of these subjects. For example, in Bishop Wordsworth's School, Salisbury, the general plan adopted recently has been to abandon old divisions and unify the subjects known as history, geography, economics, and (in part) English, into a clearly thought-out whole, to place these new syntheses, so far as is possible, under the same master, and to replace much of the old knowledge-content by more useful material.¹

The older classical curriculum had one great advantage over its modern successors—namely, its synthetic unity. So many vital developments have occurred since the Renaissance, that it is no longer possible to revert to this synthesis, at least for the great majority of pupils who have to adjust themselves to the living present. A new and appropriate centre must therefore be found, round which humanistic studies can be grouped. Mr. H. G. Wells rightly regards the history of man and of his interaction with his environment as this new centre. His attempt to write a world history from the evolutionary standpoint is consequently of outstanding significance to modern education; for it opens up new possibilities of grouping humanistic studies, which may eventually solve the problem of the overcrowded Secondary School curriculum. If the history of mankind, radiating from earlier know-

¹ F. C. Happold, *Citizens in the Making*, 1935.

ledge of the customs, language, literature, history, and geography of the native country, is the essential during early adolescence, Latin, Greek, French, German, Italian, Spanish, and other foreign languages become options, enabling the adolescent to follow in greater detail and with more real understanding sectional movements in human history, but never becoming essential elements in the curriculum. It is far better that any or all of these options should be discarded, rather than that the many-sided growth of a living individual should be crippled by their inclusion.

A balance between the four foundational groups of studies should be preserved in the curricula of all pupils, whether in Grammar, Central, or Senior Schools, during the third springing-up period of early adolescence. Scientific studies should not crowd out the humanistic group; languages should not be regarded as substitutes for sciences; nor should either eliminate physical training and the practice and appreciation of the arts and crafts. The Grammar School must shake off the remaining shackles of its former slavery to the printing-press. Something may thus be lost to the pupils in second-hand information, but nothing will be lost in intellectual power and much will be gained in harmonious many-sided development. "Great readers who exclude other activities are not distinguished by subtlety of brain," said Professor Whitehead. "They tend to be timid conventional thinkers. . . . To a large extent book-learning conveys second-hand information, and as such can never rise to the importance of immediate practice. . . . The second-handedness of the learned world is the secret of its mediocrity. It is tame because it has never been scared by facts."¹

¹ A. N. Whitehead, *The Aims of Education*, 1929, p. 79.

The psychologizing of the curriculum—that is, its adjustment to suit the different individuals at successive stages of their development—not only ensures them the best chance of harmonious and many-sided development, but, paradoxical as it may sound, increases their opportunities for adventures in thought and action, at each formative stage, and also subsequently in late adolescence and maturity, when specialization along lines of their own choosing becomes appropriate. Thus by obedience to the two educational commandments, by respecting the living individuals, and by appreciating the living present, the educator is able to work with, and not against, the process of creative evolution.

CHAPTER XIX

DIFFERENTIATION OF THE CURRICULA BETWEEN THE SEXES

THROUGHOUT English educational history there have been repeated conflicts between two different and competitive ideals of girls' education. On the one hand, it has frequently been held that girls should be educated for home life, and that the acquiring of skill in needlework, housewifery and music should be the centre of the educational process. On the other, it has sometimes been argued that the true intellectual status of women and girls should be recognized by their being given full opportunities for acquiring knowledge of the classics, modern languages, and the sciences ; in short, by the way being opened for them to be influenced by all of the great cultural movements of mankind.

This antithesis appeared, for example, in the sixteenth century, when the common practice agreed with Mulcaster's view that reading, writing, music, sight-singing, skill in needlework and housewifery, were the fundamentals, and indeed comprised all the subjects that should be universally taught to girls ; but when Sir Thomas More conducted the very significant educational experiment of having his three daughters taught Greek and Latin, Philosophy, Astronomy, Physic, Arithmetic, Logic, Rhetoric, and Music—with results that brought commendation from Erasmus, and created a rival tradition, which culminated in the

education along similar lines of Queen Elizabeth herself.

In the early nineteenth century the "domesticity" ideal seems to have been in the ascendant. "This is the condition of a young lady's existence," writes Thackeray. "She breakfasts at eight; she does Magnall's questions with a governess till ten; she practises the piano till one; she walks in the square with bars round her till two, then she practises again, then she sews, then she comes down to play to papa, because he likes music whilst he is asleep after dinner." This was the period of samplers, on which were frequently worked verses outwardly indicative of respect for elders, and expressing a kind of wistful piety, but no doubt cloaking very different inner sentiments. It is difficult to believe that any young girl, however confined and protected, would spontaneously express such views as the following:

"Harriet Nelson is my name,
And with my needle I work the same,
So all the world may plainly see
What care my parents took of me.

"Let dress take up but little time
And not in gaudy clothes to shine;
Reflect how short must be thy stay,
How vain to deck a piece of clay."

A few years later, Miss Buss at the North London Collegiate School and Miss Beale at Cheltenham Ladies' College were experimenting with a liberal curriculum, and were teaching girls subjects, even including mathematics, which had previously been thought to be beyond their powers. Following the work of these pioneers, there gradually developed a network of Girls' Secondary Schools, with a curriculum similar to that of the traditional Boys' Public

Schools, staffed by mistresses bent on preparing their pupils for professional or University life, or at least for the same qualifying examinations as those taken by boys. Women's Colleges were also founded in London and the older Universities; and thus a system of higher education for women and girls was evolved, which was in the main a copy of that already traditionalized for men and boys. The pioneers of girls' education in the nineteenth century naturally aimed at revealing the educability of their sex; and if to this end they over-emphasized the many resemblances between the sexes and under-emphasized their differences, it was no doubt necessary in order to disturb the paralysing convention which had relegated girls to an angelic, but infra-human, class, and women to a permanent position of pampered inferiority. The experiment certainly proved that many girls and women had both the desire and ability to profit by a broad and truly liberal education; it led naturally to further experiments in the co-education of the sexes, both at the Secondary School and the University stage. The way was thus prepared for a free reconsideration, unhampered by mistaken conventions, of the whole problem of the differentiation of education for the two sexes. This question became urgent when it had become customary to add to the curriculum for girls domestic subjects, art, and music, as well as the academic subjects usual in boys' schools. There was clear evidence of a definite overcrowding of the curriculum, especially in the middle forms, and of resulting overpressure of many girls receiving secondary education.

What constitutes a *good* education for girls? Is it the same as a *good* education for boys? Or are there differences between the two sexes, especially at the Secondary

School stage, which should lead to the adoption of different curricula in the two cases? This was the main question which confronted the Consultative Committee of the Board of Education, which began its deliberations during the War and after some interruption eventually in 1922 issued its report on *Differentiation of Curricula between the Sexes in Secondary Schools*.¹

Although much of the evidence contained in this Report, especially that relating to physical differences between the sexes and to differences in the achievements of boys and girls in the various subjects of the existing Secondary School curriculum, was striking, the general conclusions drawn by the Committee tended to be safe and negative, rather than bold and constructive. The chief recommendations made were that there should be more flexibility, and that Art and Music should be given a more prominent place, in the curricula of both boys' and girls' schools; that researches should be undertaken with a view to discovering more concerning the differences between boys and girls in mental qualities and in educational achievements at the Secondary School stage; and that girls should be encouraged to take the First School examination about a year later than boys.

Since the date of the appearance of this Report, there have been a number of developments in educational theory and practice which are likely to affect the solution of this problem. The partial reorganization of adolescent education through the setting up of Central and Senior Schools side by side with the older kind of Secondary School, the growing revolt against a narrowly academic view of education at all stages, and the increasing tendency to psycho-

¹ H.M.S.O., 1923.

logize education have prepared the way for new experiments in harmonizing the two conflicting conceptions of the education of girls.

The Consultative Committee's Report started from the thesis that "if boys and girls are different in constitution and structure, but alike in the social functions which they are expected ultimately to discharge, they ought to receive a like education; just as, conversely, if they are alike in the former but different in the latter, they ought to be educated differently."¹ This view is not only opposed to the psychological tendency in education, with its insistence on the need for respecting the individual, but it is also inconsistent with modern ideals of freedom and democracy. Its essentially anti-democratic nature can be easily realized by considering its application to groups within one sex. For example, it has been found that the majority of the sons of manual workers take up similar work to their fathers. Suppose it were argued that *all* sons of manual workers should therefore be educated to fulfil this one kind of function, without regard to individual differences and unusual abilities; in this case, no one would deny that the repression of individuality involved in the refusal of appropriate educational opportunities to the specially gifted would virtually be a form of slavery. The principle here enunciated of disregarding differences in constitution and structure when the social functions are expected (though by whom is not clear) to be identical, and of disregarding resemblances when social functions are assumed to be different, is equally undemocratic when applied to the education of the two sexes.

¹ *Differentiation of Curricula between the Sexes in Secondary School*, H.M.S.O., 1923, Introduction, p. xii.

Apart altogether from the practical difficulty of foretelling what a girl's function is to be, while she is still in the growing period of life and when the place of her sex in the community is changing rapidly, there is a philosophical objection to allowing supposed function to be the sole, or even the chief, factor in determining her education. In a democracy, whatever may be true of other forms of social organization, function is secondary—that is, it should itself be determined by desire, constitution, and abilities, within the limits of supply and demand ; this is as true of the one sex as of the other. Consequently, the resemblances and differences between the sexes and between the representatives of each sex should be the chief factor in determining the solution of the problem of their education. It is not the only factor. The nature of the living present, to which individuals must adjust themselves, should also be taken into account ; and in this connexion, the question of probable function can be considered in its proper setting, and be allowed to have its appropriate influence on the conclusions to be drawn concerning the differentiation of the curriculum for the two sexes.

Obviously the changing position of women in modern society will affect the issue. It has already been shown¹ that one of the most outstanding features of the living present in this country is that women now have a greater measure of economic and psychological independence, freer entrance into the professions and into business and commerce, and the full responsibilities of citizenship in a democratic state. Recent statistics do not give any support to the view that marriage has on that account become less attractive to them. Indeed, apart from the War period

¹ See pp. 48-51.

and the years immediately following it, the number of marriages per thousand of the population in the United Kingdom has shown very little variation since 1870. Thus the average for the years 1870-2 is recorded as 15.5; and in 1933—the latest year for which the corresponding data are available—the proportion of marriages per thousand of the population also amounted to 15.5.¹ Through the development of modern science and with the growth of a democratic form of government, the conditions of married life for women have changed profoundly during the same period, especially in the middle and upper classes of society. Women who now choose the task of home-making, and perhaps of motherhood, tend to have more freedom and leisure, a more equal companionship with their husbands, and more opportunities for recreation and sport and for various forms of voluntary, including public, service. This becomes increasingly true as their children grow up. Even the former need for “feminine accomplishments” has been modified by recent scientific developments. In the early nineteenth century, as Thackeray indicated, the playing of the piano was regarded as a necessary accomplishment for girls. But now the broadcasting service to so many homes has made it unnecessary for wives or daughters to be forced, irrespective of their musical ability, to try to rival the facility of a barrel organ. Those who are interested and have the appropriate ability will and should be trained; but the others should no longer feel constrained to spend hours in torturing pianos. They may follow their own interests, and yet fulfil their function as effective home-makers.

Whether a woman undertakes the task of home-making,

¹ *Statistical Abstract*, H.M.S.O., 1935, Table 19.

which, broadly interpreted, is second to none, either in significance, or in the demands which it makes on physique, intelligence, insight, and character, or whether she enters business or a profession, her work does not constitute the whole of her function. She is called also, under modern conditions, to fulfil the responsibilities of citizenship ; and this entails not only the enlightened understanding of social, national, and international problems, but also the undertaking of useful, possibly public, work, in the spirit of fellowship. She is called also, as a human being, to adjust herself to the Living Universe, to understand it so far as she is able, and to co-operate in the process of evolution. Knowledge of the material universe and of the evolution of life in its myriad forms, all great social and cultural developments in the life of mankind, all new realizations of truth and beauty, all outstanding ethical and religious developments, and all the accumulated wisdom of the human race, are her heritage—if she has the desire and ability to appropriate them. Her true vocation cannot be fulfilled if she is denied approach to any great cultural or spiritual movement, which might be critical to her development, and to which, endowed with her gifts, she might make a significant contribution. Every woman, as well as every man, should be as completely human as her native endowments permit, standing in right relationships to her family and other social groups, and to the living present. Whatever technical training in home-management she may require, her education must be essentially liberal in character, if she is to be helped to fulfil her true function. The curriculum for girls, as for boys, should therefore be well balanced ; at the adolescent stage, it should include representative subjects from the four fundamental groups—

namely, physical education and games, arts and crafts, the sciences, and literary and historical studies ; but it does not necessarily follow that it should be a slavish copy of that for boys.

Recent developments in educational psychology and particularly in individual psychology have now thrown new light on the whole problem of the resemblances and differences between the sexes. The relevant data in regard to the chief native characteristics—physique, general intelligence, special abilities, and temperament—have already been reviewed in some detail.¹

The differences which have been observed between the sexes during infancy and childhood are so slight that they would not appear to have any educational significance. At later stages, there are important differences in physical and emotional constitution and development. There is, however, a close resemblance in regard to innate intellectual ability. The average intelligence of boys and girls of the same chronological age, as measured by standardized tests, shows little difference ; and the range of variations from the average is the same. It is probable that more of the girls tend to cluster round the average, and more of the boys to go to the two extremes ; but there are always some of each sex at both ends. The case for Reorganization and for the differentiation of the curricula according to ability is therefore much the same in principle for both sexes. It is useless to expect either boys or girls of less than average ability to profit by the study of a vast number of subjects with extensive syllabuses ; they need a simpler, though a well-balanced, curriculum. It would be equally disastrous to deny to individuals of more than average ability the

¹ See Chap. XIII.

opportunity of a broad curriculum and long-continued education, because of their sex. After Reorganization has been effected, there will still remain a need, in each of the chief kinds of schools for adolescents, for options according to *individual* variations within the general scheme of the appropriate curriculum.

There is evidence of a significant difference in constructional ability, where boys on an average are superior; and in linguistic ability, where girls on an average are superior. Whether the invention and popularizing of a series of "construction" toys, similar to Meccano but centring round home occupations, would affect this difference or not, it is impossible to say. In both sexes the desire to construct is a powerful impulse, of which account should be taken; and opportunities for its expression, both in material media and in language, should be provided throughout the school period.

The most significant differences between the sexes are neither in intellectual nor special native abilities, but in physique and temperament. They are associated with the difference in biological function and first become marked during early adolescence. The chief of these are the earlier onset of the pubertal changes in the case of girls; the consequent greater liability to fatigue and anæmia during the years 11 + to 15 +; and the longer period of growth, and the resulting greater size and muscular strength of boys by the end of the period. In addition there is frequently a greater emphasis on the asthenic as compared with the sthenic emotions and in some cases a greater liability to emotional conflict in girls and women as compared with boys and men.

These facts suggest that great care should be taken of

girls during early adolescence to ensure their physical health and harmonious development. They need good food, sufficient sleep, and regular exercise in the open air. Girls are even more amenable to suggestion and guidance at this stage than boys, possibly because of their greater emphasis on the asthenic emotions ; and in view of this and of the critical nature of early adolescence in their case, it is most important that those responsible for their education should not encourage them to do excessive homework, but should guard them against overpressure. Yet frequently girls are expected to shoulder more home duties than their brothers when they are pursuing similar school courses. It would be to the physical advantage of the girls, and to the social advantage of the boys, if it were customary to have a fairer division of home duties between brothers and sisters in one family. Even then it would usually be found desirable to allow girls to have a shorter school week, (perhaps with more afternoons free), and more time in covering the corresponding school course, as compared with boys of the same age and level of intellectual ability.

Physical and temperamental differences lie at the root of the main differences in interests which are apparent in comparisons of groups of the two sexes of roughly equal intellectual ability. Though there will always be exceptions, it is probable that the majority of women find permanent satisfaction either in home-making, the care of their husbands, and the upbringing of their own children; or in occupations, such as nursing, teaching, medical, educational, and welfare work, which involve the care, protection, and guiding of human beings, and which naturally provide opportunities for the solution of possible conflicts between ambitious and social impulses. On this account their

distinctive social function in the present stage of evolution may very well be to prepare for the changes now imminent in social and international relations, by giving the corresponding push from the human end. Suppose that there is now a creative movement in human history towards a new morality based on persuasion rather than force ; then the women of this generation will need to understand it in order to play their part in guiding children (their own and other people's) into ways of thinking, feeling, and behaving, which alone will make possible the realization of this new ideal. If this be their true vocation, they will not only need the "womanly" qualities of motherliness and tenderness, but they must also have perspective, breadth of view, clearness of thought, insight, and wisdom. In short, they must have an adequate philosophy of life and a right system of values, as well as a willingness to serve and a sympathy with individuals.

There is, then, a similar need in the case of both sexes for a balanced curriculum, appropriate to the period of early adolescence, and suitable to the level and kind of ability, found in Senior, Central, and Grammar School, respectively. The same grouping of subjects, with variety of options, is desirable in each case. The kind of physical training and games which will be appropriate for adolescent girls will differ widely from that attractive to boys. Although both boys and girls should be given equal opportunities for sampling, and should then be allowed to choose freely from the various options provided in the second group, proportionately more girls will probably tend to choose arts and crafts, such as cookery, needlework, and housewifery, closely associated with home life. But neither in Senior, Central, nor Grammar School should there be

early specialization by girls on domestic studies to the exclusion of the scientific and literary studies, which are also essential for a balanced, many-sided development.

Towards the end of the course, when a vocational bias is sometimes introduced into the curriculum of the Central School, there would be no objection to developing a corresponding course with a domestic bias, provided that it was optional—that is, alternative to a commercial, technical, or other course ; was open to boys and girls alike ; and was not regarded as a substitute for studies in the other foundational groups.

In the Secondary School, which in a reorganized system will be adjusted to the needs of pupils with academic interests and more than average ability, it will be necessary to have a wide range of options in the Arts and Crafts group, and to include within it not only art and music, but domestic arts and other handicrafts. Both boys and girls should be allowed to choose freely from these, after a period of sampling ; and a full course in one or two of them should be designed to rank as a qualifying subject for the First School-Leaving Certificate examination.

It will be generally agreed that for individuals leaving school at 15 or 16 technical training for the work chosen is particularly appropriate in the immediately succeeding years. Facilities for part-time attendance at Technical Colleges or other centres for courses in cookery, needlework, dressmaking, and laundry work, for girls engaged in domestic duties would do more to improve the standard of home-management, and incidentally the status of domestic service, than any compulsory inclusion of domestic

studies in the curriculum at an earlier stage. If the general conditions of domestic service were also improved, more girls would be willing to take up useful work of this kind, especially since their attendance for special courses at a centre would give them the companionship which so many of them lack in households where only one servant is kept. Such a drastic change would no doubt mean that in future domestic work would have to be planned on a shift system, the sixteen-hour working-day, which is now usual, being divided into two halves.

The provision of similar and more advanced courses for women in cookery, dressmaking, and housewifery, as well as in home-nursing, hygiene, child psychology, and social studies, would meet the needs of many older women, who also wish to continue or to begin to attend at a centre, for recreation, further education, and social intercourse. It is at the adult stage that vocational and parental interests are most powerful; and in any extension of provision for adult education to be provided from public funds, the desire of women to continue their education along lines of their own choosing, which has been so clearly demonstrated by the development of Women's Institutes, Co-operative Guilds, Adult Schools, and other similar Women's organizations, should not be disregarded.

Is there any case for further provision at the Higher Certificate stage in the Secondary School, or in the University, to meet the special interests of girls and women of high intellectual ability? The report on *Differentiation of Curricula between the Sexes in Secondary Schools*¹ recommended that music should be made a principal subject for the Higher School-Leaving Certificate examination; but, curiously

¹ H.M.S.O., 1923.

enough, did not recommend that domestic studies should be included. Relatively few girls specialize in pure and applied mathematics, and physics, at this stage; more take up the study of the biological sciences; and the largest proportion pursue historical, literary, and language studies for the Higher Certificate. If there are temperamental differences between the sexes tending to make it probable that at least some women of high ability will find their deepest satisfaction either in married life or in other work which involves the care, protection, and guiding of human beings, the provision of a domestic studies option in the Higher Certificate would seem to be desirable in order that appropriate provision may be made for those individuals in whom this interest is predominant. It is therefore interesting to notice that the Northern Universities Joint Matriculation Board has recently signified its intention to include domestic subjects in the same group as pure mathematics, applied mathematics and physics, in its reconstituted Higher Certificate, thus providing more adequately for the differences in interest which seem to exist between the sexes.

There remains, however, a certain prejudice against, or at least doubt concerning, the intellectual respectability of domestic subjects; and there is consequently, especially in University circles, an unwillingness to recognize their equivalence to other "cultural" studies. Thus Flexner in reviewing American, English, and German Universities, refers with scorn to the inclusion of King's College of Household and Social Science as a constituent school of the University of London. "It is on the same footing," he says, "as the Imperial College of Science and Technology and the London School of Economics! Could anything

be more absurd? . . . And what does 'University' mean when such a school is included?"¹

Notwithstanding the progress of King's College of Household and Social Science and the adoption of a somewhat similar scheme at Bristol University, it must be admitted that the development of degree courses in the domestic and social sciences is still in its experimental stage; and that there is need for much constructive thought, guided by sound educational principles, before there is likely to result a satisfactory grouping of studies, centring round home problems, of equal disciplinary value to other University degree schemes. But a careful consideration of the close relationship between the domestic arts and the physical and biological sciences on the one hand, and the social sciences on the other, shows that there is no necessity, in the nature of that relationship, to abandon hope that courses may be devised on an intellectual parity with existing degree courses in mining, engineering, and other applied sciences. They would most closely resemble the preliminary studies of medical students. There would need to be the acquiring of various practical skills; but in relation thereto, there would also need to be the study of a selection of the most closely related sciences—namely, physics, chemistry, biology, physiology and anatomy, psychology, sociology, economics, and geography. There could be two main alternative kinds of courses, one stressing the physiological approach and including a scientific study of dietetics, and the other emphasizing the psychological and social sciences. Planned in this way, there is reason to believe that they would provide opportunities for observation and experiment, for judgment, reasoning, and invention—

¹ A. Flexner, *Universities, American, English, German*, 1930.

in short, for the higher intellectual processes, at least equivalent to those of other degree schemes.

It is of course useless to devise such a broad scheme of training for students who have not a high level of intelligence. Perhaps the chief difficulty in the way of this development in women's education is due to the tendency, common in many Secondary Schools, of recruiting for Domestic Arts courses only candidates of less than average ability. The institution of a Higher Certificate in which domestic studies rank equally with other subjects would do much to combat this tendency, and would prepare the way for the institution of University degree courses of an appropriate standard in the domestic and social sciences. If highly gifted women (and men, if they so desire) choose to pursue such studies, side by side with students of other faculties and not in a separate institution, they would be "liberally" educated. After a further period for post-graduate training for teaching, they would be well qualified to undertake work in Secondary Schools up to the Higher Certificate stage; and would in time develop more creative and less imitative methods of instruction in their subjects. The status of domestic studies throughout the whole educational system would thus be raised.

But what of the University? Would it have failed in its guardianship of intellectual standards by recognizing such a degree scheme? Whatever real objection there may be against recognizing an institution concerned with training in the domestic arts and sciences which is separated from other University departments and faculties, it is difficult to find any substantial reason for denying recognition to a broad scheme of study such as that previously described,

pursued *within* a University, which already admits to other kinds of Applied Science degrees. By the provision of this other option a University would increase its claim to universality, and would open up new ways along which University teachers and research students could make significant contributions to the further evolution of human society.

In this country the proportion of girls who proceed to Universities is small relatively to the proportion of boys. The number of women students in Universities has recently tended to remain stationary, or even to drop in some cases, while the total number of students has greatly increased in the same period. The result is that at present about one woman has the advantage of a University education for every three men. This discrepancy between the numbers of men and women students is least obvious in the Faculties of Arts, and is most marked in the Faculties of Applied Science, where men outnumber women by about 50 to 1.¹ The more general recognition of combinations of domestic and social sciences in University Faculties of Applied Science might reduce this discrepancy by attracting to Universities women of high ability, whose interests lie chiefly in human beings and in home and social problems. Some of these would afterwards take up professional duties in the health, educational, or social services ; others would be ca ed to the vocation of marriage, home-making, and the upbringing of children : but in neither case would the value of their University education be lost. The training, both direct and indirect, which they received would enable them to think more clearly and with less prejudice, to have broader interests, to be more tolerant, and to live more

¹ *Statistical Abstract*, H.M.S.O., 1935, Tables 33 and 35.

abundantly than would have been possible if they had not had the experience of residence in a University. To live in a University atmosphere, to have freedom and responsibility in a student community, to have chances of making intimate friendships and varied contacts with broad cultural movements, and to have time and opportunity to study domestic and social problems in all their manifold relations, during the formative years of life, should not only lead to a higher level of vocational achievement, but should also make possible the fulfilment of women's distinctive function, which would appear to be the guiding of individuals in the direction of the next advance in the evolution of mankind.

CHAPTER XX

EDUCATION FOR CITIZENSHIP IN AN INTERNATIONAL WORLD

It is now generally recognized, both in countries where there are democratic forms of government and in others where there have recently arisen dictatorships, that individuals need to be educated for citizenship. There is, however, a striking contrast between the underlying conception of education in the two cases, corresponding to essentially different views of human evolution, and of the relationship between individuals and nations.

Under a dictatorship, it is assumed that only the one or the few have rights of self-determination ; and the others must be content to obey, and to function rather as physical forces than as living persons. The State claims the allegiance of its citizens ; and its needs largely constitute the framework of their morality. In this case, propaganda and even induced hatred of other nations have frequently been justified as means of increasing the citizens' loyalty to, and willingness to serve, their own nation. In short, education for citizenship is the training of each individual for the fulfilment of his manifold duties of citizenship, as determined by the dictator and not by his own private judgment ; or by the State and not by the creative urge within the individual.

On the other hand, in a democracy there is implied a faith in the potential value and creativeness of each indi-

vidual. While no single citizen is regarded as having a monopoly of wisdom, it is assumed that all should have the right of full and free development and of the practice of fellowship, in order that each may be enabled to contribute to the common good, in accordance with his special gifts. In this case, short cuts in education for citizenship, which do violence to the individual's nature, cannot be justified even when they lead to desired actions.

In this country the frequent and effective use of methods of propaganda during elections indicates a serious imperfection in the present functioning of its democratic form of government. Grown men and women can be played on during elections by slogans and perorations; they can be frightened by scares without foundations and can be exploited by clever politicians for their own ends. The ignorance of some electors concerning the great issues involved, and the failure of others to be sufficiently unprejudiced to judge of political, social, and industrial questions in the interests of the community as a whole, undoubtedly prove the need for education for citizenship in preparation for the fulfilment of adult responsibilities.

The responsibilities of a citizen in a democracy are no longer confined to his own nation. He is frequently called upon to pronounce judgment on international issues; and, in general, the world to which he must adjust himself is an international world. The irrationality of organized warfare as a means of settlement of disputes between nations is now widely recognized in theory, if not in practice. Indeed the most significant recent thrust in human evolution seems to have been the creation and development of the general idea of a morality, based on persuasion rather

than force, governing the relationships between nations. This vision has already been vouchsafed to man ; but the partial failure of the League of Nations, the perilously slow progress of disarmament planning, the present threat of European War, and the real danger of the destruction of human civilization contingent on big-scale warfare conducted with the aid of modern scientific inventions, constitute a challenge to modern educators to endeavour to avert disaster and to prepare for the advent of peace by the education of individuals in world citizenship.

Is this possible ? If so, how should it be attempted ? Is the use of propaganda ever justifiable with children ? Should education for citizenship be direct or indirect ? These and other similar questions require the most careful consideration before any advice concerning practical procedure is adopted.

The introduction of party politics into schools is generally regarded by the teaching profession in this country as inexpedient ; but it is not always realized that the imposition of any ready-made opinions upon the minds of children and adolescents, before they are capable of judging of the issues involved, is also unjustifiable, even if the views in themselves are innocuous. Such propaganda savours of a dictatorship rather than a democracy. It is inconsistent with the fundamental educational principle that individuals should be respected, and should be trained to think without prejudice, and be allowed at the appropriate stage of development to exercise their own powers of judgment. Whether a teacher advocates the joining of an Officers' Training Corps or of a branch of the League of Nations' Union, it is equally easy for him to violate the freedom of individuals by adopting methods of propaganda and especially by

imposing his own views on them before they have reached the stage of development when interest in such questions naturally arises.

Consider, for example, the annual practice on Goodwill Day of sending a wireless peace message to the world, purporting to be from the children of Wales. Apart altogether from the ethical question involved as to whether any adult, or association of adults, has the right to speak in the name of a vast multitude of children and to broadcast a message on their behalf which has not issued from their own hearts and minds, there remains the objection that childhood is not the period of life when decisions regarding the intricate problems of international co-operation can reasonably be expected. It is useless to incite children to run before they can walk. It is valueless to put into their mouths the solutions of problems of which they have not yet felt the weight. Their social and moral education, like their physical and intellectual training, should be appropriate to their stage of development, the dynamic living forces within them being neither forestalled nor repressed by undue influence.

How, then, does education for citizenship differ from mere propaganda? Propaganda is an attempt to effect some specific change in human beings in the interests of some particular institution or cause, and without regard for the sanctity of the individuals. It is true that education too effects changes in human beings, but the changes which it sets out to achieve are the harmonious growth of individuals and their adjustment to the living present. It rejects the superficial methods of prescribing ready-made solutions of problems and of imposing unrelated scraps of knowledge on the minds of children, and regards the many-sided

development of individuals as the only legitimate and effective means of further social evolution.

Whatever glorious long-distance vision of a better social order may impel us to educate for citizenship, at the same time there must be the observance of the fundamental educational principle: "Respect the creativeness and wholeness of each individual." The procedure and methods adopted should be adjusted to the natures, varieties, and stages of development of the individuals.

In the first place, the growth of a human being is many-sided; and on this account any method of training for citizenship which appeals only to one side of experience—the intellectual—is not likely to be effective. This has been clearly realized by the recently formed Association for Education in Citizenship, which has as its main object "to advance the study of and training in citizenship, by which is meant training in the moral qualities necessary for the citizens of a democracy, the encouragement of clear thinking in everyday affairs and the acquisition of that knowledge of the modern world usually given by means of courses in history, geography, economics, citizenship and public affairs." In this statement of the aim of the Association there is an explicit recognition of the important truth that education in citizenship involves both moral and intellectual training, the latter in turn implying both the acquiring of relevant knowledge and training in the art of thinking.

The mere accumulation of knowledge concerning current events, political changes, or the functioning of the League of Nations, does not go deep enough. Indeed, it is possible for an individual to know the main facts of the history of the League and the exact terms of its covenant, without having so much as started on the highroad of

education for peace, just as one may know by heart the kings of Israel, the Commandments, and even the Sermon on the Mount, without their affecting the feelings and sentiments or influencing the inner core of the personality. "The fundamental problem in training for citizenship in a democratic state," says Mrs. Hubback, "is how to help develop in every individual the motive force which will stir him to accept the responsibilities of active citizenship. If we fail in this moral problem no amount of intellectual training will in itself create good citizens."¹

Similarly, the Sub-Committee of the League of Nations which recently reported on Moral Disarmament recognized that the feeling or moral aspect of education for peace is of supreme importance; and therefore laid down as the first principle which should apply to the education of the younger generation the following Article: "The Governments undertake to see that the teaching given in their respective territories is not only not of a character to create or maintain amongst the younger generation hatred, contempt or misunderstanding of other peoples, but is also so conceived as to develop good understanding and mutual respect between peoples."² It is of course obvious that there is implied in this article a relationship between the Government and the teaching profession very different from that which is typical of this country, but there is nevertheless a clear recognition that education for international co-operation is primarily a training of the emotions and sentiments of individuals.

If the education of the feelings is of fundamental import-

¹ *Education for Citizenship in Secondary Schools*, issued under the auspices of the Association for Education in Citizenship, 1936, p. 32.

² *Educational Survey*, League of Nations, Sept. 1932, Draft Text Article I, p. 53.

ance in training for citizenship, then the early years of life, before the word citizenship is even understood, cannot safely be ignored. In the light of modern psychological discoveries, there can be little doubt that attitudes towards society and even tendencies to action in the realm of international affairs are largely shaped in the intimate happenings of the family circle.

The traditional view that the battle of Waterloo was won on the playing-fields of Eton can no longer be accepted without question. In the light of recent discoveries concerning the developmental significance of infancy it seems probable that it was won before school days, in the very early years of life, when emotional attitudes towards the self and towards other people were first set. The family circle is the premier training-ground of the emotions ; and if early lessons in respect and consideration for others are not learned there (or in some substitute, such as a Nursery School) then later social attitudes will tend to be egocentric and distorted.

Consider, for example, the efforts of adults in the cause of industrial peace during some strike, lock-out, or dispute. That struggle is not won, or lost, in conferences of employers with trade-union leaders, in meetings of other responsible adults, nor even in the Houses of Parliament. If years before in the nurseries of the more fortunate members of society there were children in the formative years of their lives being trained to regard themselves as all-important, with never a thought of consideration for their nurses and servants, being petted and spoiled and loved but never being encouraged to love and serve others, there would be tyrants in the making. If at the same time in the homes of the less fortunate there were children repressed and

confined, surrounded by an atmosphere of anxiety and irritation, threatened and blamed for the most natural exercise of their growing powers, there would be rebels in the making. And when tyrants and rebels meet, what hope is there of industrial peace?

There can be little doubt that another of our most vexed social problems—namely, organized warfare between nations—arises partly from psychological factors; in particular, from the failure of individuals to control and sublimate such primitive instincts as self-preservation, pugnacity, and acquisition, and also the sex and herd instincts.

“Human nature being what it is,” said the late Lord Birkenhead, “war is inevitable.” Sir Norman Angell may prove the irrationality of war as a means of settlement of disputes between nations; but if human individuals must remain the slaves of primitive passions, and if adults, like children, are moved by unconscious primordial impulses, such as fear, pugnacity, self-assertion, and acquisition, they will continue to act unreasonably, even if their behaviour means the destruction of the human race.

This, however, is not the whole truth about human nature. Although man's instinctive equipment may be very like that of other vertebrates, he is profoundly different from them in the controls of the appetites and instincts, which he is able to effect. His high intelligence and his great sociability lead naturally to continuous modifications of the earlier aboriginal modes of response.¹ For example, the instinct of pugnacity may express itself in primitive form in the early stages of an individual's life; but, given the right social environment, it will soon be modified. It

¹ See pp. 83-5.

may express itself in adolescence in team games ; and it may be diverted in adult life into a struggle against disease or poverty, or into a determination to subdue Nature and to wrest from her her secrets, or into an endeavour to save human civilization from destruction. Man can sublimate even the most powerful of primitive impulses, socializing them and turning their energy to higher purposes. Education for peace is nothing less than the sublimation of these impulses by the growth of a higher morality. It goes far deeper than the acquiring of knowledge concerning different countries and different peoples or even concerning the functioning of the League of Nations. It must be begun early, and may be a long-continued process before it ends in the acceptance in truth and in deed of an ethical code based on persuasion rather than force.

The co-operation of parents (or parent-substitutes) in the endeavour to educate for peace is necessarily of the utmost importance, especially in the early stages when emotional attitudes are being rapidly determined. Yet, even among those devoted to the cause of peace, there are relatively few parents who realize how much they can do in the early days to help or to hinder the advent of real peace in their children. The truth is that infants who are brought up in unhappy homes, in an atmosphere of fear, hate, anxiety, envy, and jealousy, not only have reduced chances of mental health, but also have a bad start in world-citizenship. If they do not learn to love and trust the members of their immediate family circles, but rather develop tendencies to fear, hate, and envy in the early years, they will find it difficult to be trustful of foreigners and tolerant of other nations in later life. Even their attitude to the whole Universe may be distorted by their early emotional experiences, and their

God become a jealous God to be feared rather than loved. "For he that loveth not his brother whom he hath seen, how can he love God whom he hath not seen?"¹ Yet all too frequently, as Dr. Glover affirms in his recent psycho-analytic study of war, "the human environment of the child is charged with feelings of anxiety and hate, with envy and jealousy, with tyrannical impatience and with aggressive and sadistic impulses which seldom stop short of psychic cruelty and sometimes proceed to positive physical cruelty."² Parents do not realize that one of their most important functions is to provide and maintain a reassuring human environment, an atmosphere of serenity and love, during the early years, and especially during the phase when so many children tend to be afraid of the unknown world or of their own more terrifying fantastic constructions. An extended provision for adult education and especially for education for parenthood seems, then, to be necessary, not only in the interests of the parents, but also so that their co-operation in the character-training of their children may be enlightened and the foundations of education for citizenship be well and truly laid.

One other important point emerges from the consideration of the psychological origins of war—namely, that its compelling power does not rest solely, or even chiefly, on the strength of the primitive impulses which are usually regarded as being at its root. It is probably true that the present race in armaments and also the difficulty experienced in regard to practical measures for disarmament arise from fear and the closely related instinct of self-preservation, particularly the constant fear of being taken at some serious

¹ 1 John iv. 20.

² E. Glover, *War, Sadism, and Pacifism*, 1933, p. 96.

disadvantage. There have no doubt been actual wars which have started from fear, quickly magnified by the operation of the herd instinct. There have been others that have had at their root greed and the instinct of acquisition, sometimes especially powerful in the minds of armament makers. Perhaps other wars have arisen out of love of power or aggressive desires for the expansion of trade or territory, due largely to growth of population, which in turn must be traced back to failure to control the sex-impulse. But, whatever appears to be the immediate psychological cause, it is idle to assume that either a particular war or the custom of warfare is sustained by such primitive impulses as fear, greed, and desire for power, or even by induced hatred of the enemy. It is reinforced by finer loyalties, such as love of family, home, and nation, by a spirit of adventure, and by deeper tendencies to heroism and self-sacrifice. It is these which constitute the real glory of war and which render its sway over virile minds hard to break. So fundamental is man's love of adventure, that the cult of a merely negative peace, without risks and hard enterprises, is not likely to win the best type of adherents.

Human nature being what it is, there must either be adventures of peace or adventures of war. Such adventures of peace as the discovery of the secrets of the physical universe, the transformation of existing social structures in the interests of the many, and the application of a new ethical code, based on persuasion and not force, to the solution of international problems—all of which present difficulties and entail risks—are the only effective substitutes for the adventures of war. On this account, education for peace cannot be effective if it be merely negative. It must

rouse a crusading spirit in the new generation, of similar intensity to that found in the past in support of national interests, but now directed to the service of humanity.

The socializing of primitive appetites and instincts and the growth of loyalty towards humanity is, then, of fundamental importance in the training of the individual for citizenship. This should begin in the family circle, where parents can do much to encourage their children to practise co-operation with their fellows. Similar indirect training should be given at each stage by the school or University. "To live, work, and play in a community which has itself high social ideals, in which through setting up freedom as an ideal the child learns gradually and easily that freedom implies restraint and that liberty can only realize itself in a community through the willingness of the members to make sacrifices for it, constitutes a vital form of preparation for citizenship in later life. No training for citizenship can be equal to that gained by living in a community of this kind."¹ The more completely children are allowed to manage their own societies, clubs, shops, and other activities, and to shoulder responsibilities for the well-being of the community, the more valuable is the social and practical training received from their school life. In addition, good teaching in any subject provides discipline and practice in the art of thinking; and to think clearly and without prejudice is essential to good citizenship. Indirect intellectual training of this kind is of the utmost importance to the future citizens of a democracy; and in this sense, a good teacher, whatever his subject may be, contributes to the process of education for citizenship.

It is, however, being increasingly realized that such in-

¹ *Education for Citizenship in Secondary Schools*, 1936, E. Hubback, p. 35.

direct training is not sufficient preparation, under modern conditions, for active citizenship in an international world. In a democracy ordinary men and women need to be made aware of the chief social, economic, and political problems of their own country, as well as of their essentially international character. How and when should this direct training be given? At what stage is it psychologically appropriate? It is relatively easy to give a few special lessons on Current Events or the League of Nations, but this factual knowledge will not be woven into the texture of the individual's mind unless it is introduced at the right time. In the majority of cases it is only in late adolescence, when general intelligence has reached the apex of its development and when there is also an accession of energy to the social impulses of the individual, that there is any real and sustained interest in social problems, forms of government, and methods of co-operation between nations. Before this, even in the Junior School and still more in the Senior and Central Schools and in the lower forms of Secondary Schools, much incidental teaching in citizenship may be given in the study of history and geography, provided that suitable methods of teaching are adopted. There must, for example, be no narrow specialization on one country in geography, or one period in history. Although a child's knowledge of his own locality, country, and period will necessarily be the centre from which his interests will radiate, the teaching of geography and history should consistently aim at preparing him eventually for a world view and for the understanding of the living present.

It may, however, be argued that there is not sufficient time in the Senior School and in the lower forms of the Secondary School for the study of world-history, right up

to the present. Of course, it is obvious that the treatment cannot be detailed ; but much that has been taught in the past, such as the details of army campaigns, could safely be omitted. Only those events that mark the design of a movement are really important to anyone except the scholar and historian. Only those happenings that modify later events and consequently influence the present need to be emphasized. As Keatinge puts it : "The chapters that throw no light on the problems of modern life and afford no assistance to the contemporary citizen must be relegated to the rubbish heap."

In the Senior or Central School and in the course in the Secondary School leading to the first School-Leaving Certificate, the study of citizenship should be an integral part of the history, geography, literature, and language group, and not an additional subject. In most Secondary Schools there are already too many separate subjects in the curriculum. To accede to the demands of specialists for the inclusion of civics, economics, politics, psychology, and even of logic, would be to be guilty of psychic cruelty. It has already been shown that the difficult problem of the Secondary School curriculum is more likely to be solved by the relating and grouping of activities than by the addition of *ad hoc* subjects to an already overcrowded curriculum.¹ The new material must consequently be dealt with within the framework of the existing curriculum. This is not so difficult as it seems at first sight ; for many opportunities for incidental teaching will occur not only in history and geography, but also in modern languages, biology, arithmetic, art, and domestic science, if the educator be socially and internationally minded.

¹ See pp. 304-7.

In some progressive schools, current-events newsboards with suitable illustrations are regularly kept by the pupils. It is also usual to find that school debating or political societies, which meet out of school hours, provide most useful opportunities for the free discussion of public affairs. Other schools realize the value of foreign travel and encourage intercourse between their own pupils and boys and girls living in other countries, of similar educational achievement. Such out-of-school activities may be of vital importance in the process of education for citizenship in an international world.

The separate studies which have the most direct bearing on problems of citizenship—namely, economics, sociology, and international relations—are appropriate to the next stage of development, when individuals' powers of abstraction have increased. There are boys and girls in the sixth forms of Secondary Schools who are genuinely interested in such abstract studies, and there is consequently no objection to their inclusion as optional post-matriculation courses. The University should certainly make provision for them and also for psychology, education, commerce, law, and jurisprudence, not only in order to justify its claim to universality, but also because it is in late adolescence and early maturity that a deep interest in social studies usually develops. History and geography naturally remain foundational to this group, and the chief modern languages should also be represented, as well as the classics.

The majority of individuals, however, do not proceed to Universities, but leave school before they reach the age psychologically appropriate for *direct* training in citizenship. It is of course true that experience of life teaches,

especially if the earlier *indirect* training has been effective ; but in a democracy where each has the responsibility of full citizenship, direct training is also essential. The value of voluntary part-time adult education in civics, local government, economics, sociology, and international relations can hardly be overestimated at this stage, for the practical responsibilities of citizenship give reality to the theoretical studies, and systematic training in relation to such problems aids the individual to fulfil his social duties wisely and in the interests of the community.

The early history of adult education in this country serves to show how deep and widespread is this interest in social problems, at least among the more thoughtful workers. For example, until recently the most popular subject of study in Workers' Educational Association classes and in the Co-operative Movement was economics or economic history. The only other drives which seem to compare in strength with this citizenship interest in enabling adults to continue their education would seem to be vocational and religious interests ; though there is no reason why leisure and parenthood studies should not also receive due recognition in any extended provision for adult education. The Civics group of studies will, however, continue to make a strong appeal to many adult students ; and it is important that in the future this demand should be met in a greater variety of forms than has been usual in the past. A course of formal lectures is frequently not appropriate ; but films illustrating health problems, informal talks and debates on social questions, and practice in the management of adult clubs or people's colleges, may lead to more thoughtful and systematic preparation for the duties of citizenship. What is needed is not the

separation of these social studies from other forms of adult education and recreation, but the provision of varied opportunities for continued education in a centre controlled by the members themselves. The friendly meetings with other members holding different views may be an education in itself; and the club life may give valuable practice in fellowship and service.

Education for citizenship in an international world is, then, a many-sided and long-continued process. It begins with early lessons in love and consideration for others in the family circle. It broadens to take in strangers to the family circle, other groups, foreigners, and other nations. It involves indirect training in citizenship. In the school there should be appropriate methods of discipline to prepare for freedom and to encourage co-operation; and right methods of teaching to develop powers of clear and unprejudiced thinking. The whole life of the educational institution and the indirect moral training given in every subject and activity must prepare its members to undertake their daily work in the spirit of service, to have a deep concern for the well-being of their fellows and of the community generally. Later there should be the explicit study of social, national, and international problems; and in maturity there will be the practical experience of fulfilling the duties of citizenship. The highest education in citizenship will come from a faithful performance of the work of life, from achieving a tolerance of differences between individuals and between nations, and from the actual practice of a morality based on persuasion rather than force.

CHAPTER XXI

NEWER METHODS OF DISCIPLINE AND TEACHING

THE attempt to reorganize the educational system of this country so that it may reflect more adequately the stages of human development and the chief varieties of individuals for whom provision is being made is only part of the general movement to psychologize education. Within the schools there are also signs of more enlightened methods of discipline and teaching, due to a deeper understanding of the natures of the pupils and of the laws which govern their development.

A century ago parental discipline in the home tended to be dictatorial, and in many cases did not stop short of psychic cruelty. Mr. Barrett of Wimpole Street may not have been typical of Victorian fathers, but there can be little doubt that like him the majority of parents of his day failed to respect the individualities of their children. It is therefore not surprising to find at the same date that discipline in the great public schools was usually brutal and in some cases was militaristic. For example, as late as 1818, after the masters had failed to restore order in Winchester, a mutiny of the boys was quelled by a squad of soldiers. Even when outside military aid was not requisitioned, the masters used methods of discipline which were not fundamentally different, for they also resorted to physical force to bend the wills of the boys and to keep them, willy-nilly,

in the straight and narrow way. "They flogged their way through term after term with a high sense of duty accomplished, flogged if a lesson were not known, flogged for inattention, flogged for disorder, flogged for bullying, flogged for vice. Often they did not know who the boys were whom they flogged or why they flogged them."¹

Even afterwards, when discipline had become less brutal, it seemed to remain dictatorial. The glare of the teacher's eye or his sarcastic speech was often as withering in its effects as unmerited flogging would have been. Discipline still tended to be negative and repressive; and there was but one sanction, fear. But recently there have arisen many varied and striking experiments in school government, in which the willing and intelligent co-operation of the pupils has been sought, the teacher being content to be an adviser or partner and not an autocrat, and the best discipline being regarded as self-discipline through interest in work and the realization of responsibilities in a community.

Experiments embodying the newer conception of discipline are to be found to-day in all kinds of educational institutions from the Nursery School to the University. Perhaps the greatest contribution that Dr. Montessori has made to modern education is that she has shown that with a carefully controlled environment the principle of freedom can be applied to the problems of Infant, and even of Mentally Defective, School education with notable results. The Dalton Plan and the Project Method, which are also expressions of the belief in the value of individual methods of teaching, have been tried out in some, though unfortunately not in many, Elementary Schools in this country. At the Secondary School stage, there have been notable

¹ C. Norwood, *The English Tradition of Education*, 1929, p. 62.

experiments in self-government, such as that of Mr. J. H. Simpson¹ in a form of an English Public School ; and of Dr. O'Brien Harris, who organized a whole Secondary School for girls on the plan of individual time-tables.² The Boy Scout Movement, which has spread to almost all nations, is perhaps the most striking expression of this new faith in freer methods of discipline and teaching. Its methods are largely based on the belief that under friendly guidance boys will be willing and able to discipline themselves in their leisure hours by purposive activities and group life.

Perhaps the best known experiment in self-government in this country is Mr. Homer Lane's Little Commonwealth, which was designed on the general plan of the George Junior Republic. The boys and girls were juvenile delinquents who had been convicted of offences against the law and were sent to Mr. Lane to be re-educated. On arriving at the farm in Dorsetshire and becoming citizens of the "Commonwealth," they were given freedom to govern themselves. They lived as a self-contained community, working on the farm or in the houses for their living, receiving payment for their work, and shouldering responsibilities for the upkeep of the "Commonwealth." If any of their number did not work, he was a burden to the rest of the community—he was on the rates. They made their own laws and administered them. Mr. Lane acted throughout on the belief that anti-social behaviour is usually the result of the continued repression of the vital energy of an individual ; and that the first condition of re-education is that the repressive force should be removed.

¹ J. H. Simpson, *An Adventure in Education*.

² M. O'Brien Harris, *Towards Freedom*, 1923.

The partial success and partial failure of the experiment showed that while freedom with social responsibility certainly has power to regenerate certain individuals, there are others who seem to need remedial treatment before they can be prepared for freedom.

Judged superficially, the older repressive methods of discipline may appear to have certain advantages. Their use may result in more uniformity in the reactions of individuals; a greater mechanical precision in their obedience to rules imposed from without; and a certain tidiness in the formation of the class or group, at least in the presence of the disciplinarian. It is necessary, however, to look below the surface and to enquire—firstly, whether the older authoritarian methods are suitable to aid adjustment to the living present, which in certain respects is vastly different from the past; and secondly, whether they are really appropriate for the living individuals, concerning whose health and development there is now greatly increased knowledge and understanding.

Whatever may be true of a dictatorship there can be little doubt that uniformity of action and mechanical obedience to law and tradition are not the qualities required of the free citizens of a democracy. Rather they need self-control and a sense of social responsibility, psychological independence, tolerance of others, fairness of judgment, and a disinterested willingness to serve the community. Discipline through subjection and fear and dogmatic instruction are not calculated to foster these characteristics. Indeed, the authoritarian method of education, whether in home or school, may very easily lead to repression, sadism, or to undue emphasis on the hate-impulses of the individual, which will make co-operation with others and disinterested

service to the community more difficult to achieve, and may eventually hinder the growth of a sense of world citizenship. Repressive methods of discipline must inevitably fail to prepare for the advent in maturity of a morality based on persuasion rather than force. They are not only antagonistic to the central purpose of democratic education—the free development of individuals for service to the community—but they are also alien to the whole conception of education as a means of further human evolution.

Mere tidiness in the formation of a class or group is no guarantee of the physical, mental, or moral health of the living individuals composing it. To be effective, discipline must be adjusted to the needs of each individual, to his peculiar difficulties, and to his stage of development. Recent psychological researches concerning juvenile delinquency and concerning the more serious maladjustments of adult life have already thrown new light on the chief causes of failure in individual development, and in the near future cannot fail to modify disciplinary methods in home, school, and voluntary educational organization.

Professor Cyril Burt's detailed investigation of more than two hundred juvenile delinquents who appeared in the London police courts to answer charges for various kinds of misdemeanours, from murder, burglary with violence, to truancy, sex-offences, and attempted suicides, led him to the general conclusion that "the commoner delinquencies committed by the young consist essentially, in almost every case, either of hereditary reactions which constitute the universal human instincts, or else of slightly modified reactions elaborated out of, but still evidently springing from, these aboriginal modes of response."¹ The dis-

¹ C. Burt, *The Young Delinquent*, 1925, p. 422.

asters were either due to *overt* failure to control such primitive impulses as sex, acquisition, and pugnacity, or were to be traced to the *repression* of human instincts. Many of the delinquents were between the ages of 12 and 16—that is, were in the third springing-up period of early adolescence, when there normally tends to be a great accession of energy to the egoistic and sexual, as well as to the social, instincts. Some of them belonged to gangs, such as “the Hell Hounds,” “the Belt and Pistol Club,” or “the Black Hand League.”

Dr. Burt also showed that while the major factors which accounted for the misdemeanours examined were sometimes either hereditary, environmental, or physical conditions, in 55.2 per cent. of the boys and in 56 per cent. of the girls the major factor was psychological, either intellectual or emotional.¹ In view of this variety of major factors, it is hardly to be wondered at that Mr. Homer Lane’s treatment of young delinquents succeeded in some cases and failed in others. Boys and girls whose offences could be largely traced to their unsatisfactory environmental conditions would probably respond to the freedom and responsibilities offered them in the Little Commonwealth, and would succeed in re-educating themselves; while others whose failures were due to psychological conditions might be in as great need of special remedial treatment as those suffering from physical disease. Correct diagnosis of the individual case is the first condition of successful treatment.

The case of Stanley Q. who was found to be guilty of stealing a five-pound note from his uncle is particularly illuminating, for it suggests unexplored possibilities in the direction of preventing serious misdemeanours by early

¹ C. Burt, *The Young Delinquent*, 1925, Table XXII, p. 603.

diagnosis and suitable treatment. Some time before the major offence, Stanley had played truant and had stolen buns and bananas from market stalls. He had also failed to make ordinary progress in his school work, and his teachers agreed that he seemed to be decidedly lacking in intellectual ability. By laboratory measurements, however, he turned out to have an I.Q. of 110 per cent.—that is, he was above the average in general intelligence. The discrepancy between the teachers' estimates and the results obtained from the use of intelligence tests was explained during his psychological examination, when it was discovered that he had been indulging in an almost perpetual daydream, in which he figured as an explorer, having all kinds of interesting adventures with wild animals and savage tribes. In these imaginary adventures, the stall-holders from whom he stole the buns and bananas were made to play the part of the savages against whom he made successful raids.

The method of cure recommended was based on the diagnosis that the moral offences arose from a serious maladjustment to the family circle, involving hatred of the father. There were earlier symptoms of this maladjustment. In view of his relatively high native ability, Stanley's unsatisfactory progress in school was a clear indication that something was hindering the natural course of his development. An earlier psychological examination would have revealed the cause or causes of his unsatisfactory progress, and with the co-operation of his parents, Stanley could have received treatment, suited to his individual difficulties, which would have prevented the later offences.

The need for setting up Child Guidance Clinics for early diagnosis and treatment of maladjustments of this kind is clearly proved from Dr. Burt's work; and already such

clinics have been widely established in America. A few have been set up in London and other large cities in Great Britain, and their usefulness in aiding backward and unstable children to overcome their difficulties is being increasingly recognized by parents and teachers. In the near future they will no doubt be regarded as necessary adjuncts to the existing educational provision.

Dr. Burt's discoveries and other recent similar psychological investigations into the causes of juvenile maladjustments and delinquencies and into the conditions of adult psychoneuroses cannot fail to throw new light on the whole problem of the methods of discipline and teaching which are suitable for normal children at different stages of development. In the first place, there is ample evidence that during school life there must be co-operation between parents and teachers if discipline is to be really effective in aiding the moral development of children. The home is necessarily the premier training-ground of the child's emotions; and the influence of parents in regard to the training of character is so great that their enlightenment and example is often foundational to the success of the whole educational process.

Secondly, discipline, whether in home, school, or voluntary organization, should be positive and sympathetic, rather than negative and repressive. If serious misdemeanours arise from lack of control or from repression of one or more of the universal human instincts, then discipline should be directed to encouraging the individual to control and to sublimate these natural impulses. Mental and moral health will be ensured not by denying, but by utilizing, the dynamic energy from the appetites and instincts in ways that are desirable. Years ago, when there

was a campaign for the introduction of more handwork into the London Elementary Schools, Dr. Ballard noticed that as the handwork periods in the school time-tables increased, the number of entries in the punishment books tended to diminish. If the sizes of the classes in our schools were even reasonable, the newer *individual* or creative methods of teaching,¹ which utilize such impulses as construction, acquisition, self-assertion, and play, and the newer *group* methods,² which give scope for co-operation between pupils, would practically solve the problem of classroom discipline in the majority of cases. There should be no unnatural divorce of discipline and teaching. On this account, any method of instruction, such as broadcasting, which involves such a divorce can only have a very limited application to the education of children. Apart altogether from the difficulty of establishing *two-way* contact between the minds of the children and of the broadcaster, and consequently of ensuring active thought and expression work on the part of the children, it is obvious that the use of radio lessons for a class is only possible through the presence of a disciplinarian, whose business it will be to keep order while another teaches. On account of this drawback, while broadcasting will no doubt be of the greatest value in adult educational work, its frequent use with children would in effect be a reversion to the older "informative" methods of teaching, which largely ignored the dynamic forces at work within the pupils' minds, and on this account would only aggravate the problem of school discipline.

The ideal discipline is certainly that in which no explicit

¹ For a fuller description of these methods, see Wheeler, *Bergson and Education*, 1922, Chap. X.

² *Ibid.*, Chap. XI.

question of it arises, but in which the pupils are encouraged to sublimate their own primordial impulses through their work and through the fulfilment of their social responsibilities. What meagre chances teachers in Elementary Schools in this country have of attaining this ideal can be realized from even a cursory consideration of recent official returns concerning the size of classes. According to the 1935 Report on Education, there were still a few classes each containing more than 60 children (a scandalous lag in educational progress); more than 4 per cent. of all classes in Elementary Schools had more than 50 children; and more than one-third of the total number of classes consisted of more than 40 children.¹ Yet there was, and still is, a fall in the child population of Elementary School age in Great Britain, which rightly viewed in the light of recent psychological discoveries should have been regarded as a unique opportunity for improving methods of discipline and teaching in Elementary Schools. To miss this opportunity would be disastrous, not only for the individuals otherwise subjected to mass-instruction, but also for the prospect of the advent in this civilization of a higher morality based upon persuasion rather than force.

Methods of discipline and teaching, like the curricula of schools, should be adjusted to the characteristic developments of successive periods in the life-histories of individuals. This necessity is frequently overlooked by enthusiasts in the cause of moral or religious education; but recent psychological researches have proved beyond all reasonable doubt that it is only by adjusting training to the rhythms of growth that mental and moral health can be attained in maturity.

¹ *Education in 1934*, H.M.S.O., 1935, Table 16.

In infancy what is chiefly needed in addition to a suitable physical environment is a regular régime, an atmosphere of order, serenity, and love, and the care of enlightened parents (or parent-substitutes), who are themselves disciplined by the acceptance and practice of a high moral code. Towards the end of the period there will be an increasing need for independence and for child-companionship, so that the individual may be trained to give and take, to serve and to be served. In the next stage of early childhood there is usually a break with the home circle, and parents and Infant School teachers now share the responsibilities of character-training. It is important that they should co-operate, and that both should realize the necessity for play methods of teaching and for positive and sympathetic methods of discipline. In the Junior School, which is designed for the period of late childhood, discipline will be largely through the example of parent and teacher, through hard work, and through the friendship of other children. The majority of individuals at this stage take kindly to routine and tend to accept, without serious question, the rules of life recommended by their elders.

The problem of discipline becomes more complicated in the next period, not only because of the characteristic developments of early adolescence—the increased sense of self, the new interest in sex, and the social and religious awakenings—but also because of the variety of formative agencies—home, school, occupational group, club or other voluntary juvenile organization, and Church—which now play a part in the moral training of the individual, any one of which may do violence to the laws which govern his development. The methods which were suitable for the Junior School are no longer adequate in the Senior, Central,

or Secondary School, in view of the great accession of energy which usually comes to the self, sex, social, and religious impulses. There must be more freedom for the individual. Group methods of teaching, as well as team games, are appropriate at this stage; and the more pupils there are who can share in the responsibility of running the school, or its scientific, dramatic, or other societies, and who really feel themselves to be the guardians of its good name, the better it will be for all. Discipline at this stage comes most naturally through membership in a vitally organized community, with high ideals and a healthy tone.

Notwithstanding all the formative influences which are operative in disciplining the adolescent, there is all too frequently a curious gap in the training given him in regard to one of his newly functioning appetites. Perhaps neither his parents, his school, nor his Church give him any real guidance in regard to the sex-impulse. In the past this side of human experience was usually hidden in the darkness of a primitive taboo. Now it is being increasingly realized that to deny to the adolescent all "open" knowledge of the creativeness of life is neither likely to lead to healthy control of the sex-impulse nor to the formulation of an adequate philosophy of life. Discipline of the sex-impulse, as of other instincts, should be positive and sympathetic, and not negative and repressive.

Under existing circumstances many an individual leaves school before the end of this third springing-up period and shoulders the responsibilities of a paid job. This in itself may be a most valuable discipline, provided that the job is suited to the individual's abilities and is of the nature of an apprenticeship, and that the general conditions of work are appropriate to this growing period and in particular

do not exclude opportunities for preparation for the other characteristic adjustments of early adolescence.

The methods of discipline and teaching which should be adopted in late adolescence and maturity, whether in full-time courses at Universities or in part-time educational courses, will naturally be different from those appropriate in the Secondary School. Although the one should merge gradually into the other, the essential difference between Secondary and University education is the difference between immaturity and maturity. On this account, University students need to be given greater freedom and responsibility, both in regard to their work and to their conduct, than would be appropriate at an earlier stage. In addition to managing their own athletic activities, leisure occupations, and social organizations, they should be free to organize their own studies, within certain wide limits, and to adopt their own methods of work. There is undoubtedly a risk in this greater freedom; but unless an individual can survive this change and thereby gain in moral and intellectual strength, the University is no place for him. Residence within it will not lead to harmonious and many-sided development, unless the student can discipline himself in pursuit of his professional ambitions or his life-plan of service to the community.

In maturity, individuals may continue to gain in mental or moral strength through self-discipline and especially through the faithful performance of their manifold duties as workers, parents, citizens, and members of religious or other organizations. They may develop a guiding philosophy of life and attain a measure of consistency in the practice of an ethical code. This is the highest education. It is not confined to adult educational classes or to Univer-

sity lecture courses ; it is not dependent on formal instruction. The Church, the trade union or professional organization, the learned society or any statutory or voluntary body of which an individual becomes an active member, may play a part in his further education in so far as it encourages him to serve his fellows, to have regard for Truth, Beauty, and Goodness, and to realize his responsibilities to the future. If his religion is his own and not a mere veneer imposed from without, if it synthesizes his own deepest experiences, it will not become "fixed," but will continue to develop and will bear fruit—"the fruit of the Spirit," which is "love, joy, peace, longsuffering, gentleness, goodness, faith, meekness, temperance : against such there is no law."¹

In this way, creative education, which does no violence to living individuals, but respects the dynamic impetus and the rhythm of their development, and which encourages them stage by stage to new and deeper adjustments to the Living Universe, will not only result in the mental and moral health of individuals, but, when more widespread, will lead to a wider fellowship, a deeper realization of common humanity, and eventually to the emergence of higher values than have so far embodied themselves in human history. Education, thus conceived, is an adventure of peace, which requires in its service the highest intelligences and the most disciplined characters, inspired with a desire to serve humanity and willing to sacrifice themselves for the sake of the future. It is an adventure of peace, which can be a substitute for the adventure of war.

¹ Galatians v. 22-3.

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